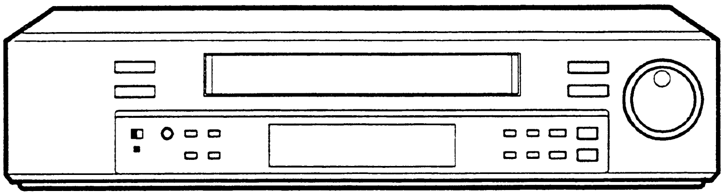
1997

MITSUBISHI

Service Manual

TIME LAPSE VIDEO CASSETTE RECORDER

VHS
PAL



MODEL
HS-7424E
HS-7424E(B)

Only cassettes marked VHS can be used with this video cassette recorder.

SPECIFICATIONS

Tape Format : VHS 1/2" high-density video cassette tape
Power Source : 100~230V±10% AC ; 50Hz
Power Consumption : Approx. 20W
Television System : CCIR standard 625lines, 50fields
PAL type colour signal
Video Recording System : 4 rotary heads, azimuth helical scanning system
Luminance Signal : Frequency modulation recording
Colour Signal : Low frequency conversion, sub-carrier phase shift recording
Audio Recording System : 1 full track head, recording system
Erase : 1 full track head
Linear Audio Track : 1 track
Fast Forward / Rewind Time : Approx. 140sec. with E-180 cassette
Alarm Recording Time : Timed: 15sec./ 30sec./ 45sec./ 1min./ 2min./ 5min./ 10min.
Manual 1: Until the alarm reset switch is switched on.
Manual 2: Until the alarm set switch is switched off.
Video Input : 1.0Vp-p, 75Ω unbalanced BNC plug
Audio Input : –8dBs, 50kΩ unbalanced RCA pin plug
Video Output : 1.0Vp-p, 75Ω unbalanced BNC plug
Audio Output : –6dBs, 1kΩ unbalanced RCA pin plug
Operating Temperature : 41°F to 104°F
Relative Humidity : MAX. 80%
Weight : Approx. 4.5kg
Dimensions : 425(W) x 93(H) x 315(D)mm
Display Position : In any position
Timer Program : 8 programs-Daily start and stop time for one week.
Display Format : Display model 1: (Month)-(Day)-(Year) (Hour) : (Minute) : (Second) (Alarm recording no.)
: Display model 2: (Month)-(Day)-(Year) (Hour) : (Day of week) : (Alarm recording no.), (Hour) : (Minute) : (Second) (Recording mode)
Battery Back Up : Lasts 31 days
Deck : U Deck

Tape Speed and Recording Time (with E-180 cassette)

Mode	Time	Speed (Drive)	Recording interval
3H	3hrs	23.39mm/sec (Continuous)	ever field
L12H	15hrs	4.68mm/sec (Continuous)	5 field
L24H	27hrs	2.60mm/sec (Continuous)	9 field

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

MITSUBISHI ELECTRIC

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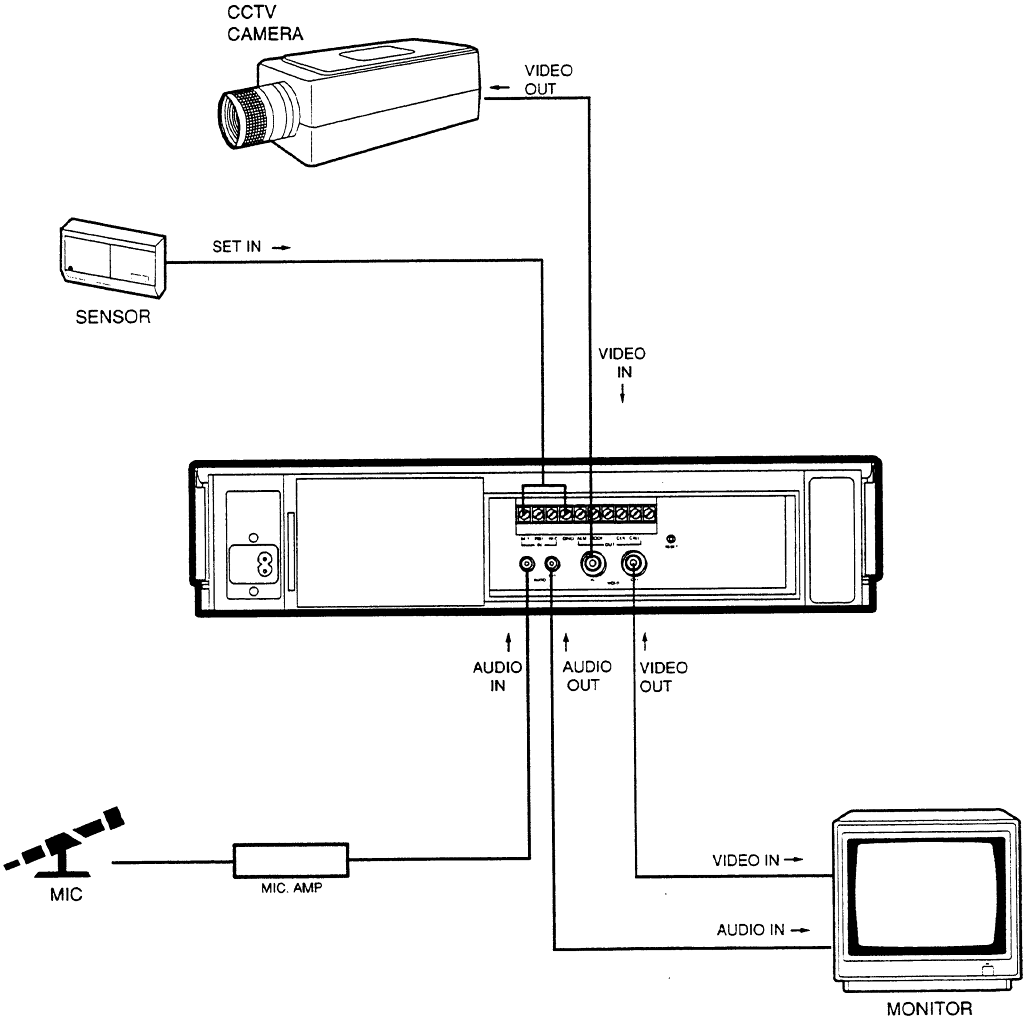
SCHEMATIC DIAGRAM

PRINTED CIRCUIT BOARD PARTS LAYOUT

CONNECTING WITH OTHER EQUIPMENT


CCTV CAMERA
VIDEO OUT
SET IN
SENSOR
VIDEO IN
AUDIO IN
AUDIO OUT
VIDEO OUT
MIC
MIC. AMP
VIDEO IN
AUDIO IN
MONITOR

VERTICAL ADJUSTMENT (Correcting picture vibration at the top and bottom)

When watching a still, slow motion, fast playback or normal playback in L12H, 12H, L24H or 24H mode, the picture may vibrate. In this case, press the VERTICAL ADJUST(+) or (-) button to reduce or eliminate the picture vibration.
If this applies to all playback modes then :
- Adjust the "VERTICAL ADJUST" for 3H respectively by the following steps.

1. Record image and still-playback the tape.
2. Press the VERTICAL ADJUST (+) or (-) button to reduce or eliminate the picture vibration.

Monitor to be connected

- Connection with CCTV monitor (for surveillance) is recommended.
- Connecting with some monitors may cause picture vibration and/or picture distortion at the top or bottom of the image at still playback or normal playback.
  A television for domestic use may easily cause the picture vibration and distortion.

CHECK PROCEDURE OF ELAPSED TIME

```
<MAINTENANCE>
    POWER LOSS LIST
     ALARM LIST
     ALL MENU INITIALIZE
     POWER LOSS LIST CLEAR
     ALARM LIST CLEAR

    <REPEAT REC TIMES>              0
    <ELAPSED TIME>                   0H
```

1. Press the DISPLAY button to display the "MAIN MENU".
2. Turn the JOG to select the "MAINTENANCE".
3. Turn the SHUTTLE to right.
4. The "<ELAPSED TIME>" is displayed.
5. Press the DISPLAY button.

Note: The "<ELAPSED TIME>" counts up to 99,999 hours.

WARNING INDICATION

Self-Detection Function

This model has a function to detect internal malfunctions.

If any malfunction occurs inside the set, the state of malfunction is displayed on the fluorescent display or the monitor.

Press the COUNTER-RESET button on the front panel for 10 seconds or more to indicate the latest malfunction. The number that indicates the type of the malfunction is displayed together with the warning indication "WRNG" on the fluorescent display.

Again press the COUNTER-RESET button for 10 seconds or over to cancel the indication.

No.	FLUORESCENT DISPLAY	MONITOR	MALFUNCTION	STATE	REMEDY
1	End	TAPE END	TAPE END DURING RECORDING	Tape stops at the tape end during recording.	Rewind the tape or replace it by a new one.
3	---	NO SIGNAL	LOSS OF VIDEO SIGNAL INPUT	Leak of video signal continues for 5 secs or over during recording.	Input the video signal or stop recording. *1
5	---	CHECK	REEL ROTATION SYSTEM TROUBLE	Trouble occurs in reel rotation system during recording.	Disassemble for repair.
6	---	CHECK	LOADING MOTOR SYSTEM TROUBLE	Deck is on the wrong position during recording or when recording starts.	Disassemble for repair.
7	---	CHECK	CAPSTAN MOTOR SYSTEM TROUBLE	Capstan motor does not rotate during recording.	Disassemble for repair.
8	---	CHECK	DRUM MOTOR SYSTEM TROUBLE	Drum motor does not rotate during recording.	Disassemble for repair.
9	---	CHECK	LOOSE TAPE	Tape is suffered from troubles such as looseness during recording.	Disassemble for repair.
10	---	---	SHORT CIRCUIT	Power supply (SW5V, SW12V) short-circuit.	Disassemble for repair.

*1: If the indication "WRNG" does not disappear even after the appropriate countermeasure, disassemble the set for repair.

1. TAPE END

<FIRST TIME SET UP>

The indication appears for the following conditions;
item "TAPE END", on the screen is set to "STOP",
alarm is input once or more times while set to "ALM PROT", and
timer recording is implemented while it is set to "REWIND".

2. LOSS OF VIDEO SIGNAL INPUT

When the video signal is turned off during recording for 5 seconds or more, the "NO SIGNAL" appears on the monitor.

3. REEL ROTATION SYSTEM TROUBLE

When trouble is detected in the reel rotation system, recording starts after returning the tape to the "CASSETTE-IN" position and loading it again. If the problem is not eliminated after this operation is repeated twice, the indication "CHECK" appears on the monitor.

4. LOADING MOTOR SYSTEM TROUBLE

When wrong loading system is detected, the intended mode is selected after returning the tape to the "CASSETTE-IN" position and loading it again. If the problem is not eliminated after this operation is repeated twice, the indication "CHECK" Appears on the monitor.

5. LOOSE TAPE

When looseness or transfer error is detected, the following operation is made after the tape is returned to the "CASSETTE-IN" position and loaded again;

- When 3H, L12H or L24H mode is selected for recording, the original mode is selected after recording at 3H mode for 8 secs.

If the problem is not completely eliminated even after this operation is repeated three times, the indication "CHECK" appears on the monitor.

CONTROL INPUT/OUTPUT SIGNAL

No.	SIGNAL	Terminal	USAGE
1	SET INPUT	SET IN	Starting alarm recording
2	RESET INPUT	RST IN	Finishing alarm recording / Adjusting clock
3	RECORD INPUT	REC IN	Starting recording or shot recording
4	ALARM OUTPUT	ALM OUT	Output while alarm recording is under way
5	CLOCK OUTPUT	CLK OUT	Command camera switching
6	CALL OUTPUT	CALL OUT	External warning device

Cycle of clock output during recording (CLK OUT)

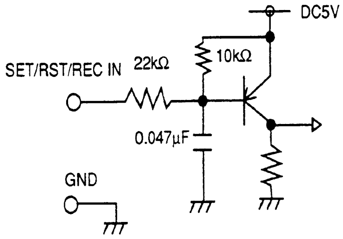
The cycle of clock output during recording is variable according to the specified value of " CLOCK OUT " in REAR TERMINAL of MAIN MENU. Refer to the below table.

	Cycle of clock output during recording												
Dividing Ratio / Mode	Specified value of CLOCK OUT in REAR TERMINAL of MAIN MENU												
	1	2	3	4	5	10	15	20	25	30	50	60	FILED
3H	If REC is selection : (1/FF signal) × dividing ratio. If T/L REC is selected : Fixed at "H" level.												If REC is selected : (1/FF signal) × 1/2. If T/L REC is selected : Fixed at "H" level.
L12H/L24H	Time lapse cycle × dividing ratio.												Time lapse cycle. (dividing ratio fixed at 1.)

CONTROL INPUT/OUTPUT SIGNALS AND CIRCUIT

■ SET/ RST/ REC IN terminals (screw)

Active: When input terminals are short-circuited to GND or "L" level voltage (0 - +1.6V) applied.
Time for active: 0.1 sec or over.
Non active: Open the input.

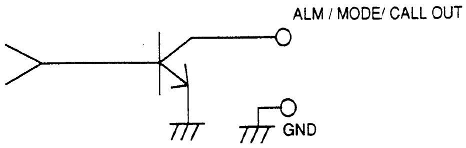

DC5V
SET/RST/REC IN
22kΩ
10kΩ
0.047µF
GND

<Interface circuit inside the VCR>

■ ALM/ CALL OUT terminals (screw)

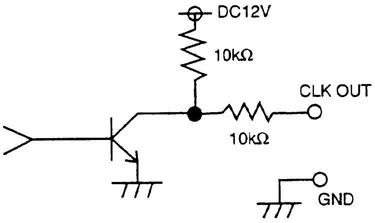
Active: "L" Level voltage (0 - +0.4V) outputted; max. drive current 50mA(+5V DC)/ 10mA(+24V DC)

Non active: Open; max. Voltage +24V DC


ALM / MODE/ CALL OUT
GND

<Interface circuit inside the VCR>

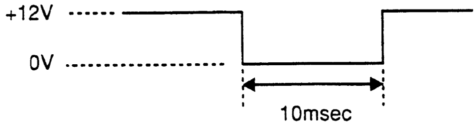
■ CLK OUT terminals (screw)


DC12V
10kΩ
CLK OUT
10kΩ
GND

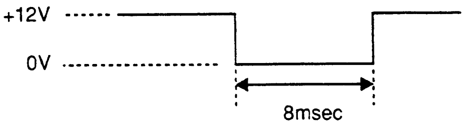
<Interface circuit inside the VCR>

CLK OUT signal

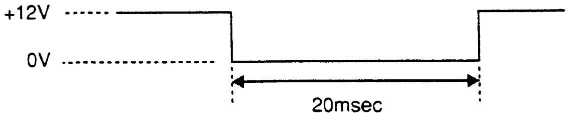
- When "F" is selected in REC of CLOCK OUT mode in 3H recording


+12V
0V
10msec

- During recording in L12H or L24H recording mode.


+12V
0V
8msec

- When except "F" is selected in REC of CLOCK OUT mode in 3H recording.


+12V
0V
20msec

MAINTENANCE GUIDE

[○ : CLEANING ● : CHECK & ADJUSTMENT ◎ : REPLACEMENT □ : GREASING]

SPECIFICATION	HOUR										
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	10,000
ASSY DRUM *1	○	○	○	○	○	○	○	◎	○	○	○
DRUM MOTOR	○	○	○	○	○	○	○	○	○	○	◎
FE HEAD	○	○	○	○	○	○	○	○	○	○	◎
A/C HEAD UNIT	○	○	○	○	○	○	○	○	○	○	◎
TAPE PATH POLES *2	○	○	○	○	○	○	○	○	○	○	○
CAPSTAN SHAFT	○	○	○	○	○	○	○	○	○	○	○
REEL DISK	○	○	○	○	○	○	○	○	○	○	◎
VIDEO HEAD *3	○	◎	○	◎	○	◎	○	◎	○	◎	◎
CAPSTAN MOTOR								◎			
PINCH ARM UNIT								[◎]			
LOADING BELT								[◎]			
REEL BELT								[◎]			
BCP2 UNIT								◎			
REEL GEAR UNIT (SP, TU)								◎			
MAIN BRAKE (SP, TU)								◎			
TENSION BELT UNIT								◎			
IDLER UNIT								◎			
CLEANING ROLLER UNIT								◎			
BRUSH *3								◎			
LOADING MOTOR ASSY											◎
LOADING MECHANISM											□
SERVO CIRCUIT *4								●			
Interchangeability Adjustment of the Mechanism								●			

*1 Means the UPPER DRUM ASSY and LOWER DRUM ASSY.

*2 Refer to 1. Cleaning the DECK of MECHANICAL ADJUSTMENT AND REPLACEMENT.

*3 Included in the UPPER DRUM ASSY of the ASSY DRUM.
The exchange every 4,000hrs is recommended only over 24Hr mode used.

*4 Included in the PCB-MAIN.

Note : 1. Check tape running functions and performance such as picture and sound concerning each mode at inspection.

2. Disassembly for repair is required when the operating time exceeds approx. 10,000hrs.

3. [◎] :Replace with new part at 4,000hrs or three years.

DISASSEMBLY

1. Removal of Top Cover

1. Remove the four Top Cover fastening screws (ⓐ) shown in Fig. 1 and remove the Top Cover in the direction shown by the arrow.

2. Removal of Front Panel

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Jog Dial and the Shuttle Ring.
3. Unfasten the seven catches (ⓑ) shown in Fig. 1 and remove the Front Panel in the direction shown by the arrows.
4. Disconnect the Connector JJ shown in Fig. 1.

Note: Before installing the Front Panel, make sure that the lever is on the lower position. Push the cassette door open and install it.

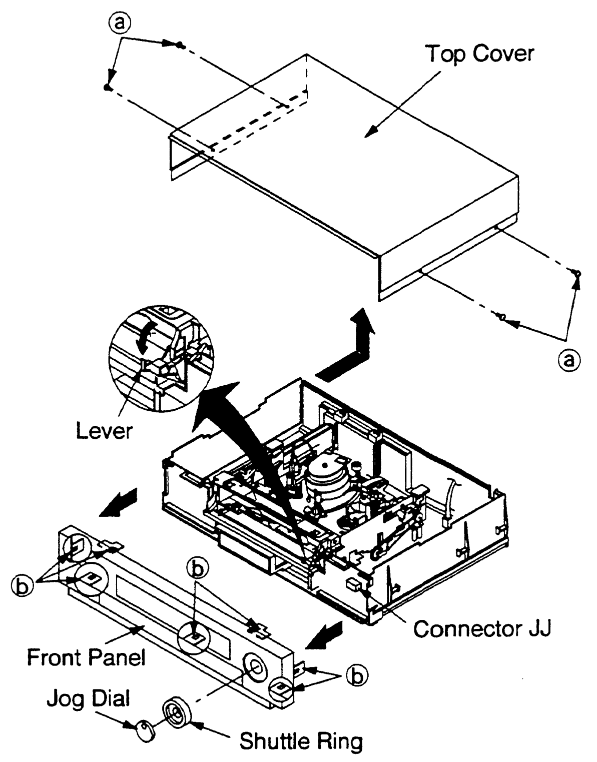


Fig. 1

3. Removal of Bottom Panel

1. Turn the set upside down as shown in Fig. 2.
2. Remove the three fastening screws (ⓐ) shown in Fig. 2.
3. Push the one hook (ⓑ) toward inside. Slide the Bottom Panel backward to remove it, with taking care of the four catches (ⓒ).

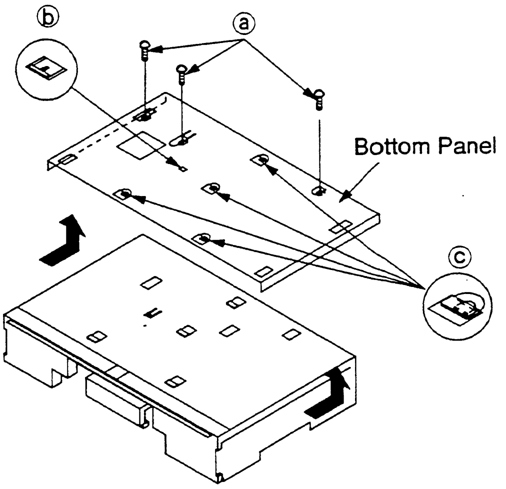


Fig. 2

4. Removal of DECK ASSY

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Remove the Bottom Panel.
   (Refer to Para. 3 of the DISASSEMBLY.)
4. Remove the three screws (ⓐ) shown in Fig. 3.
5. Remove the three screws (ⓑ) shown in Fig. 4 and raise the Shield Plate upward to remove it.
6. Remove the one screw (ⓒ) shown in Fig. 4 and remove the Ground Lead Wire.

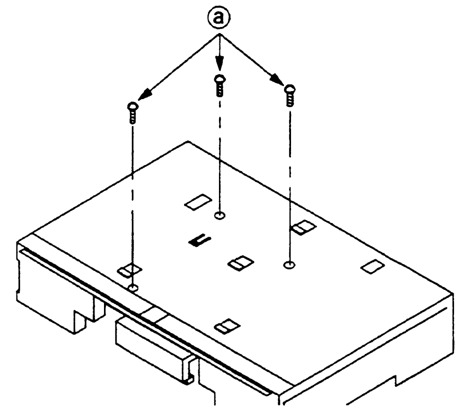


Fig. 3

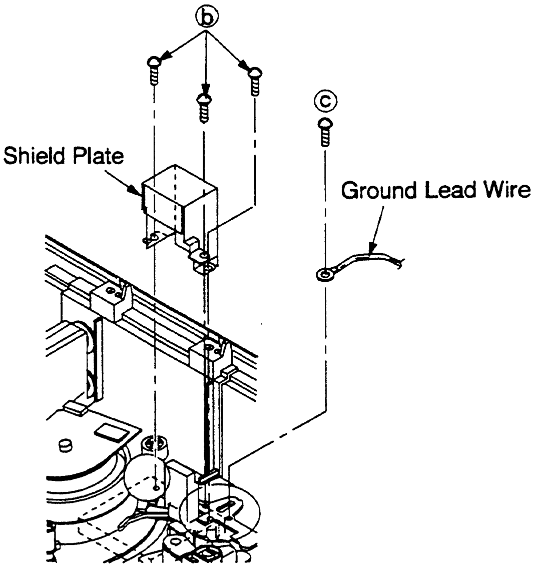


Fig. 4

7. Remove the five screws (ⓓ) shown in Fig. 5.
8. Disconnect the Connectors MA, MD, MF, MH and ML.
9. Raise the DECK ASSY upward to remove it, paying attention to the Connector MC placed below the DECK ASSY.

Note: During installation of DECK ASSY, take care of the Connector DD which is apt to be removed by side force.
Do not pull the Spacer to raise the DECK ASSY.

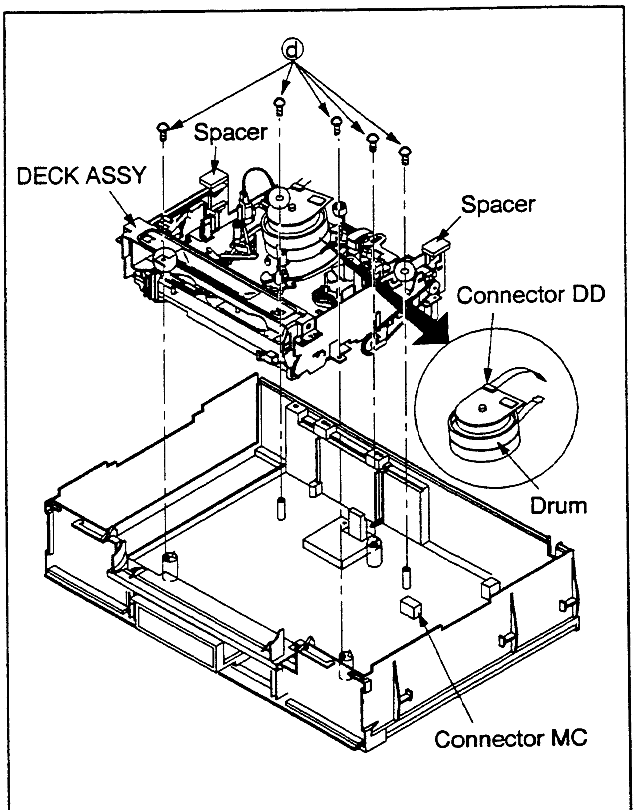

ⓓ
Spacer
DECK ASSY
Spacer
Connector DD
Drum
Connector MC

Fig. 5

5. Removal of Insert Guide

1. Remove the DECK ASSY.
   (Refer to Para. 4 of the DISASSEMBLY.)
2. Remove the two screws (ⓐ) shown in Fig. 6.
   Raise the Insert Guide upward to remove it.

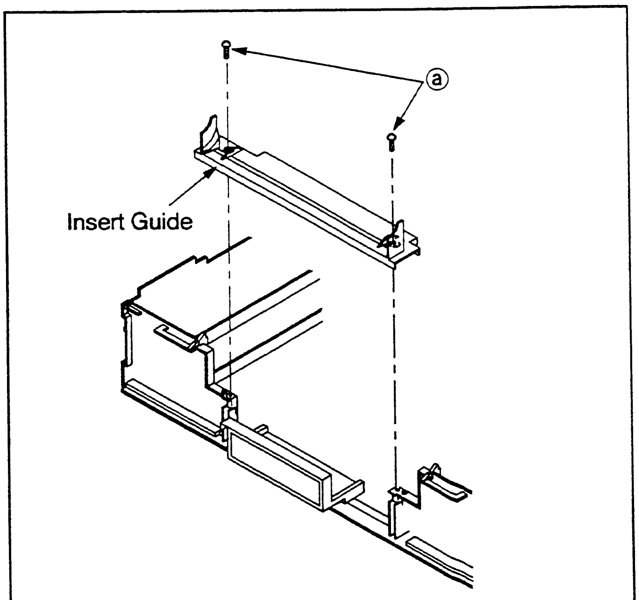

ⓐ
Insert Guide

Fig. 6

HOW TO EXECUTE CIRCUIT BOARD SERVICE

CAUTION: BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE A.C. SOURCE.

LOCATION OF PRINT CIRCUIT BOARDS

Note :

- Take caution when removing flat cables to prevent any contact problem.
- Connect and disconnect the flat cables at right angles to the connector and make sure that they are completely secured.
- After servicing the PCB, reconnect the flat cable and leads.

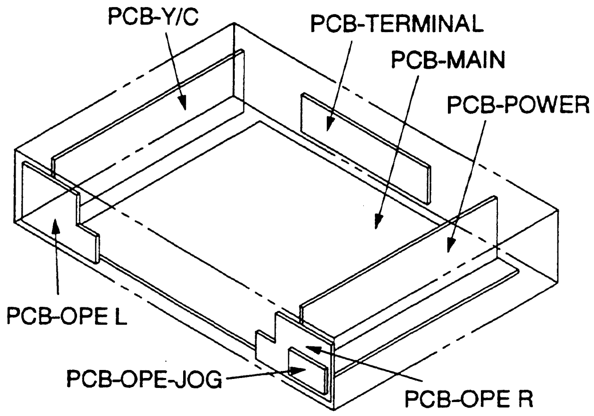

PCB-Y/C
PCB-TERMINAL
PCB-MAIN
PCB-POWER
PCB-OPE L
PCB-OPE-JOG
PCB-OPE R

Fig. 7

1. PCB-OPE L

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Unfasten the one catch (ⓐ) shown in Fig. 8 and rotate the PCB-OPE L in the direction shown by arrow (ⓑ) and remove it in the direction shown by arrow (ⓒ).

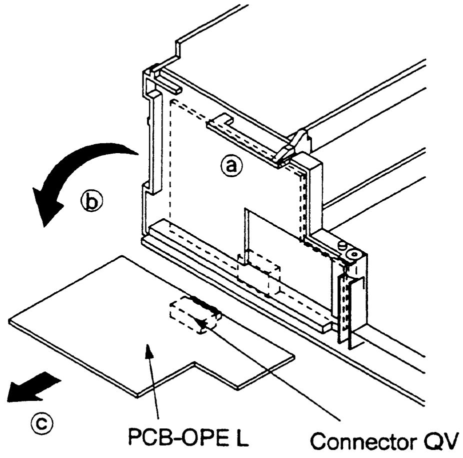

ⓐ
ⓑ
ⓒ
PCB-OPE L
Connector QV

Fig. 8

2. PCB-OPE R

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Unfasten the one catch (ⓐ) shown in Fig. 9 and rotate the PCB-OPE R in the direction shown by arrow (ⓑ) and remove it in the direction shown by arrow (ⓒ).

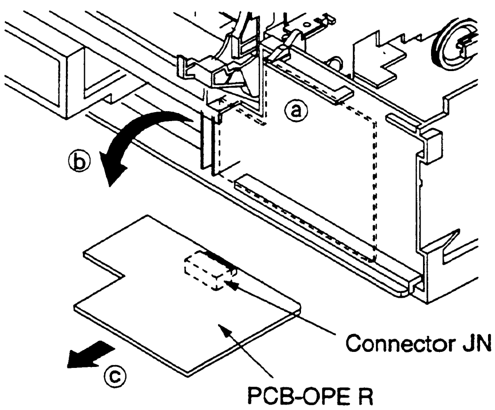

ⓐ
ⓑ
ⓒ
Connector JN
PCB-OPE R

Fig. 9

3. PCB-JOG

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the Front Panel.
   (Refer to Para. 2 of the DISASSEMBLY.)
3. Remove the three PCB-OPE-JOG fastening screws (ⓐ) shown in Fig. 10 and remove the PCB-OPE-JOG.

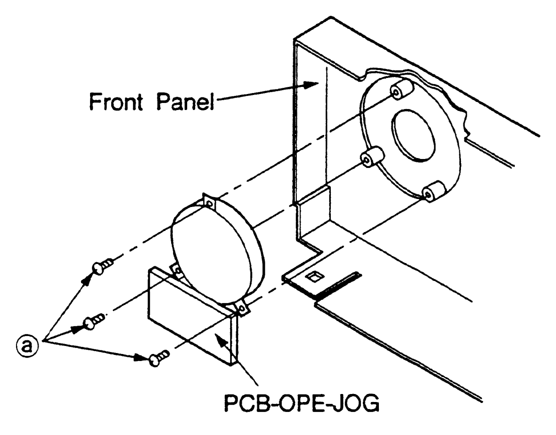

Front Panel
ⓐ
PCB-OPE-JOG

Fig. 10

4. PCB-Y/C

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the one screw (ⓐ) shown in Fig. 11.
3. Disconnect the Connectors SR and SS.
4. Remove the PCB-Y/C.

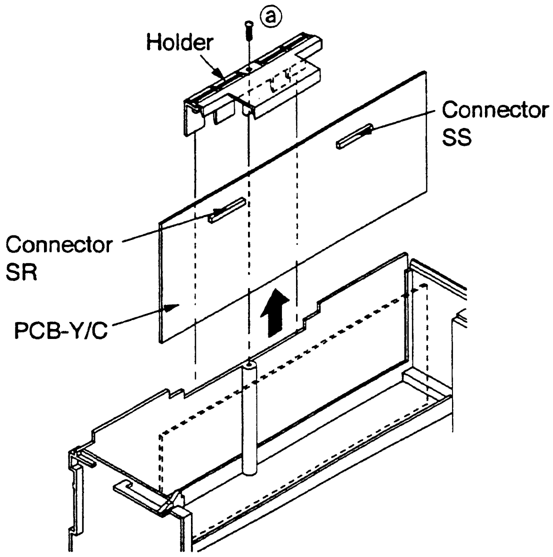

ⓐ
Holder
Connector SS
Connector SR
PCB-Y/C

Fig. 11

5. PCB-POWER

1. Remove the Top Cover.
   (Refer to Para. 1 of the DISASSEMBLY.)
2. Remove the two screws (ⓐ) shown in Fig. 12 and raise the Holder to remove it.
3. Remove the one screw (ⓑ) shown in Fig. 12 and remove the Ground Lead Wire.
4. Remove the two screw (ⓒ) shown in Fig. 12 and raise the PCB-POWER to remove it.

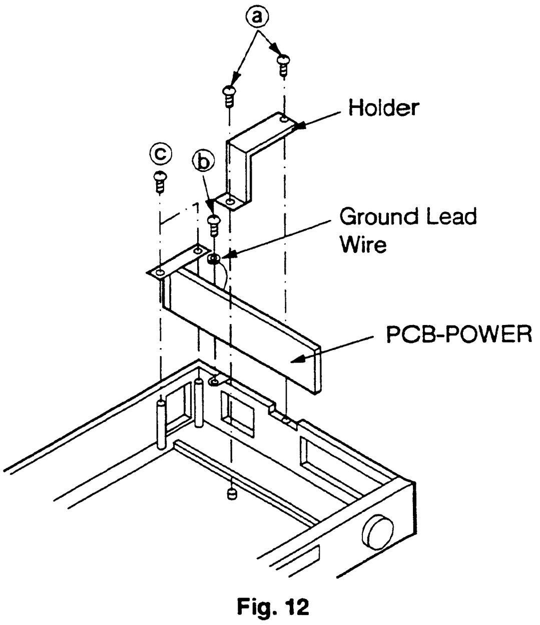

ⓐ
Holder
ⓒ
ⓑ
Ground Lead Wire
PCB-POWER

Fig. 12

◪ Service of Transistor (Q901)

1. Disconnect the power plug.
2. Remove the one fastening screw (ⓓ) shown in Fig. 13.

Note: Check that transistor (Q901) is connected to the Heat Sink before turning the power on. If the power is turned on without installing the Heat Sink, Q901 can be damaged.

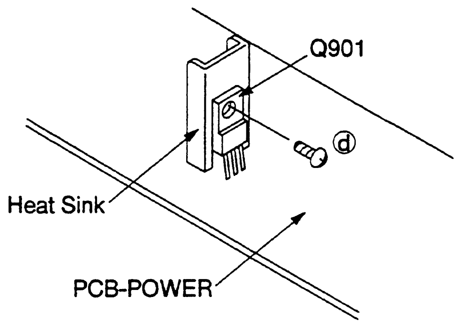


Fig. 13

6. PCB-MAIN

6-1. Removal of PCB-MAIN

1. Remove the DECK ASSY.
   (Refer to Para. 4 of the DISASSEMBLY.)
2. Remove the Insert Guide.
   (Refer to Para. 5 of the DISASSEMBLY.)
3. Remove the PCB-OPE R and PCB-OPE L.
   (Refer to the preceding paragraph.)
4. Remove the three screws (ⓐ) shown in Fig. 14.

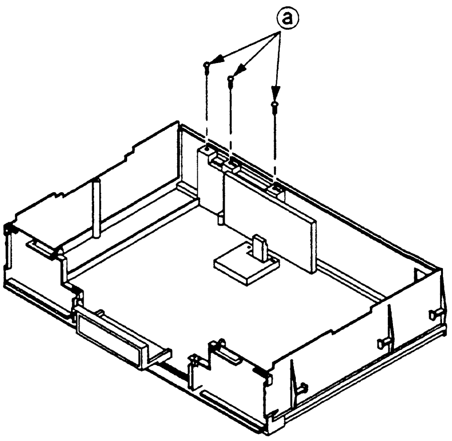


Fig. 14

◪ Service of Head Amp block

1. Unsolder the four soldering points of the Shield Case shown in Fig. 15 and remove it.
2. Unsolder the three soldering points of the Shield Plate shown in Fig. 15 and remove it.

Note: Before checking the operation, mount the Shield Case and the Shield Plate on the original position. If not connected, beat or picture malfunction may appear.

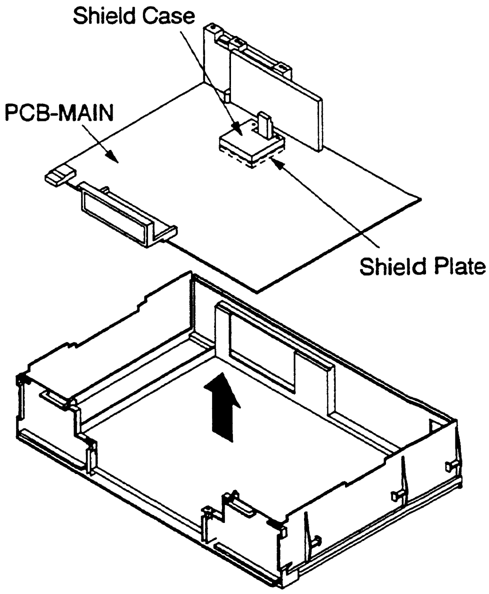


Fig. 15

6-2. Removal of PCB-TERMINAL

1. Remove the PCB-MAIN.
   (Refer to the preceding paragraph.)
2. Remove the PCB-TERMINAL shown in Fig. 16.

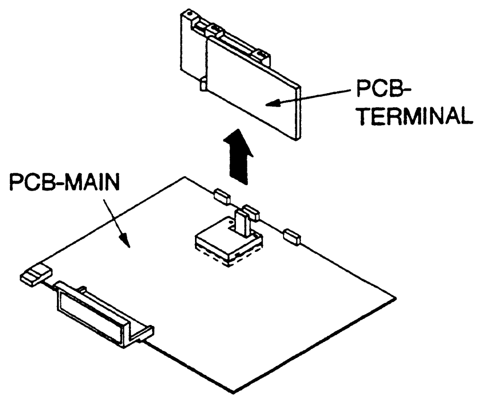

PCB-TERMINAL
PCB-MAIN

Fig. 16

6-3. Removal of Terminal Cover

1. Remove the PCB-MAIN.
   (Refer to the preceding paragraph.)
2. Remove the PCB-TERMINAL.
   (Refer to the preceding paragraph.)
3. Remove the five screws (ⓐ) shown in Fig. 17 and remove the Terminal Cover.

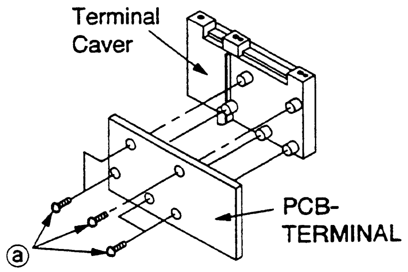

Terminal Caver
PCB-TERMINAL
ⓐ

Fig. 17

DECK OPERATION CHECK

Operation of the deck position and tape running systems can be checked according to the following method.

1. Unscrew all screws fastening the DECK ASSY and Shield Case.
2. Place the DECK ASSY on the Base Chassis so that the centre of the rear side aligns with the boss and that the rear side of the supply side aligns with the screw hole as shown in Fig. 1. Raise the front side of the DECK ASSY and support it.

Note: The MODE DETECT SENSOR, START SENSOR, END SENSOR, REEL SENSOR and RECORD PROTECTION SENSOR cannot operate in this state.

- Parts on the DECK (LOADING BELT and REEL BELT) can be replaced.

3. Short-circuit TP5T and TP5X.

Note: Connect them before plugging in the set.

4. Turn the Power on.
5. Press the RESET button on the rear panel.
   (The "LOCK" is displayed in fluorescent display.)
6. Insert the Video Cassette Tape.

Note: This check may damage the cassette tape.
Use a dummy cassette tape with a door or other tapes for test purpose only.

7. Press the TRACKING (+) and (-) buttons to check the deck position.
   TRACKING (+) button : Operation in the loading direction.
   TRACKING (-) button : Operation in the unloading direction.
8. Connect the Connector MC and the CAPSTAN MOTOR on the PCB-MAIN with the Extension cable (859C433080). Press the POSITION/VERTICAL ADJUST (+) and (-) buttons to check the operation of the tape running system.

Note: Take care that the two connectors of the Extension cable are attached in the same direction, without twisting the cable.
(+) button : Forward rotation is implemented.
(-) button : Reverse rotation is implemented.

- **Example :** Play back, REW/FF
  1. Press the TRACKING (+) or (-) button to align the character PR or FR of the CAM GEAR (TU) with the positioning hole of the WORM PULLEY UNIT shown in Fig. 4.
     PR : Play back position
     FR : REW/FF position
  2. For fast forward operation check, press the POSITION/VERTICAL ADJUST (+) button to make the CAPSTAN MOTOR rotate in the forward direction. For rewind operation check, press the POSITION/VERTICAL ADJUST (-) button to make the CAPSTAN MOTOR rotate in the reverse direction.

9. Open-circuit TP5T and TP5X.
10. Press the RESET button on the rear panel.

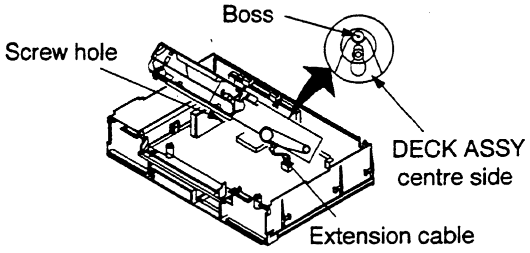


Fig. 1

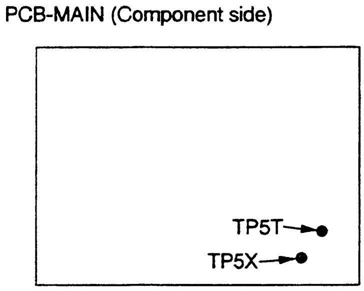


Fig. 2

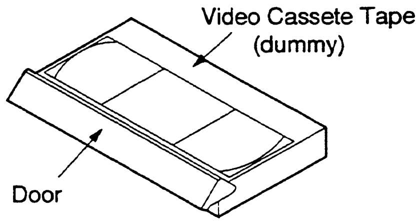


Fig. 3

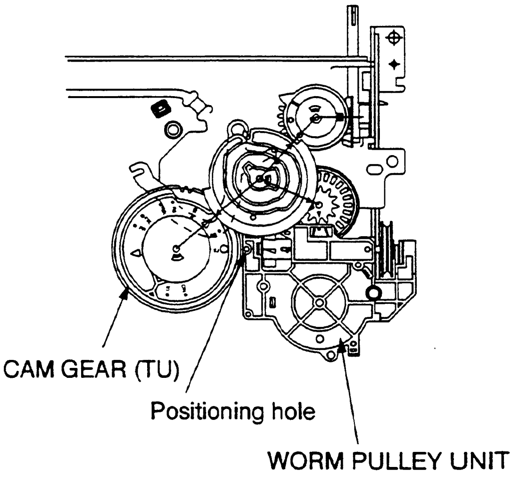
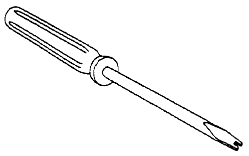
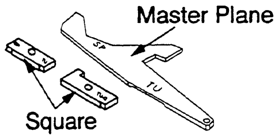
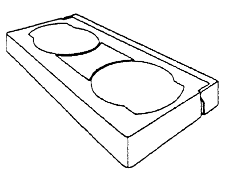
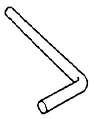
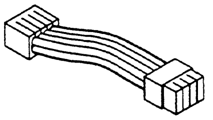
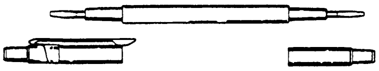
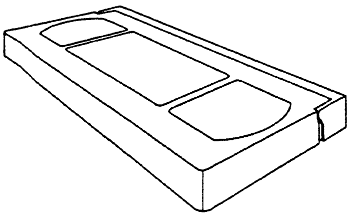


Fig. 4

MECHANICAL ADJUSTMENT TOOLS

	PURPOSE	METHOD
Adjustment Driver **(859C259080)** 	For adjustment of guide rollers.	Carefully insert and adjust guide rollers.
Height adjusting Jig • **Master Plane** **(859C342020)** • **Square** **(859C433060)**  	The master plane and the square are used for measuring height and perpendicularity of the reel disk and Take up guide arm.	The gauge is applied to the part being measured.
Back Tension Gauge **(859C345080)** 	The back tension gauge is used for measuring the tension of the tape on the supply side.	Load this gauge in the cassette housing and run in the play mode. Read the gauge indicator.
Cotton gloves	For changing, cleaning and handling of drum, heads and guides.	Use when handling all parts in the tape path.
Grease **MULTEMP SH-A** **(859D055080)**	Lubrication of various parts.	To be applied as specified.
L SHARPED BOX DRIVER **(859C433070)** 	The L SHARPED BOX DRIVER is used for tightening or removing screws which fasten the guide rollers.	Insert the screw and turn.
Extension Cable **(859C433080)** 	For check of DECK operation.	Connect the MC connector and the CAPSTAN MOTOR.
Oil **FLOIL** **(859D154020)**	Lubrication of various parts.	To be applied as specified.

ELECTRICAL ADJUSTMENT TOOLS

	PURPOSE	METHOD
Adjustment Driver (859C338000) **767-M** 	The adjustment driver is intended to adjust variable resistors, trimmers, transformers etc. in the circuitry.	Select a tip suitable for the particular head of the component concerned and adjust.
Alignment Tape **(PS2 : 859C339010)** **(PM6KH3 : 859C339030)** **(PM3KE6(CH1) 25 : 859C568050)** **(PMX : 859C568070)** 	Standard signals (VHS Standard) are recorded on the alignment tape and reproduced when required in the adjustment of Servo circuit and interchangeability alignment.	Install and run in the play mode, the same as for an ordinary tape.

ELECTRICAL ADJUSTMENTS

Perform only the alignments required. If proper equipment is not available, do not attempt an alignment.

☐PRE-ADJUSTMENT SETTINGS

* If otherwise specified, make adjustments under the following conditions.

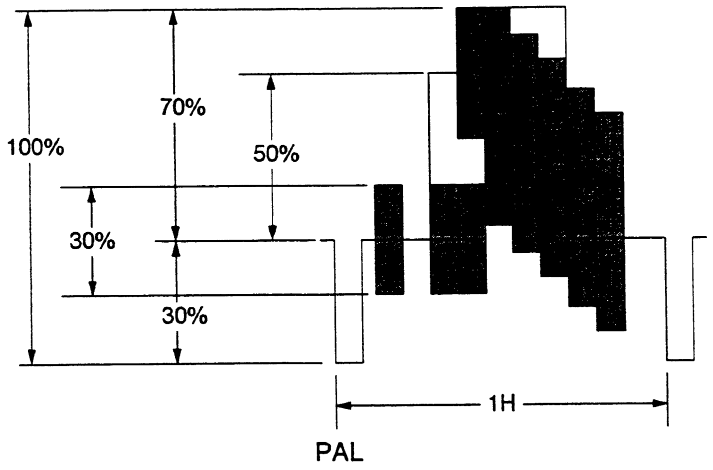
• A-TAPE	VHS TAPE (E-180) on the market.
• VIDEO	Colour position.
• PICTURE VR (VR701)	Centre click stop position.
• LOCK button	OFF position.
• Display mode	Non-characters display mode. (DISPLAY MODE 3 or 4)

☐MEASURING EQUIPMENT

- Oscilloscope (10:1 probe unless 1:1 specified.)
- Signal generator
- Audio tester
- Frequency counter
- Miscellaneous electrical tools

☐TEST SIGNAL

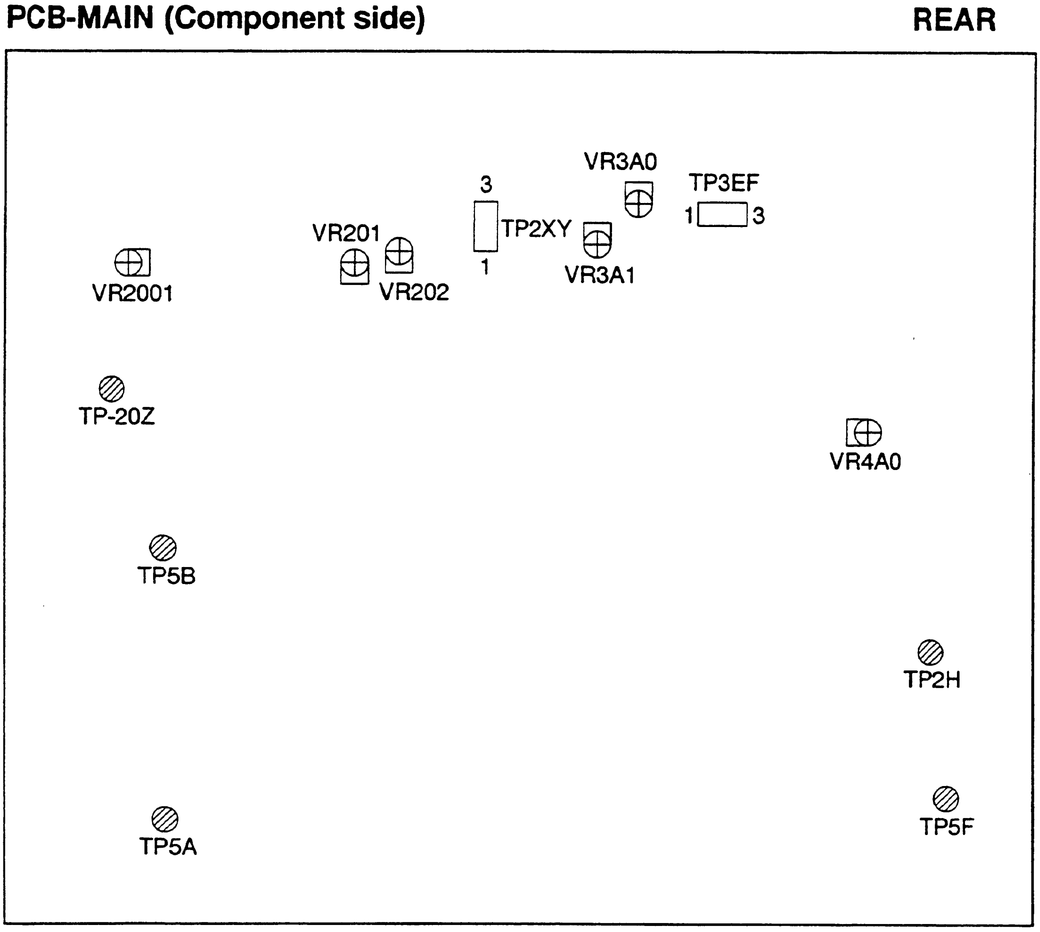
Colour bar signal
In this manual, unless otherwise specified in particular, use the colour bar signal specified below.



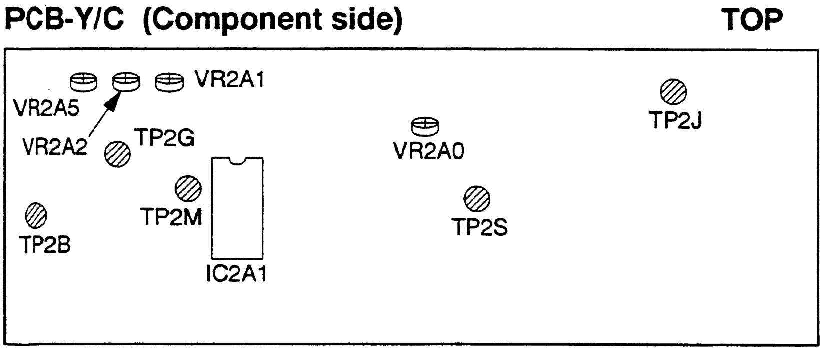
Split-Field colour bar (with 100% window)

LOCATIONS

PCB-MAIN (Component side)


REAR
VR3A0
3
TP3EF
1
3
TP2XY
VR201
1
VR3A1
VR2001
VR202
TP-20Z
VR4A0
TP5B
TP2H
TP5A
TP5F

PCB-Y/C (Component side)

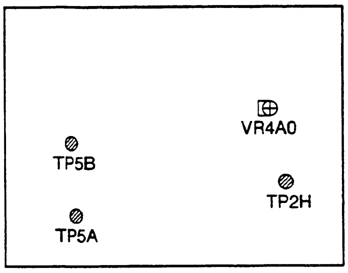

TOP
VR2A1
VR2A5
VR2A2
TP2G
TP2J
VR2A0
TP2M
TP2B
TP2S
IC2A1

[Servo circuit] 1. Playback Switching Point	**Adjustment purpose**	Video switch over timing during playback.
	Symptom when incorrectly adjusted	Switching noise or jitter in the playback picture.

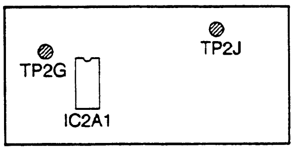
Measuring instrument and condition		**VCR set up condition**	
Oscilloscope		**Input signal**	---
Test point	TP2J	**Using tape**	Alignment Tape (PS2, stair step)
EXT trigger	TP2H	**VCR condition**	3H Playback
Measurement range	DIV 20mV TIM 50µs	**Using Jig**	---

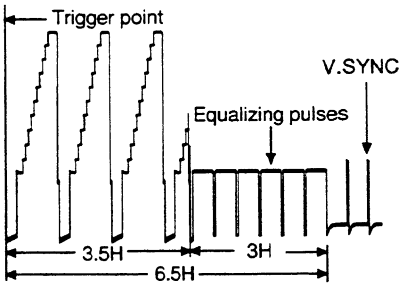
1. Set the VCR to 3H PLAY mode.
2. Play back an Alignment Tape. (PS2, stair step)
3. Push the TRACKING (+) and (-)buttons at the same time.
4. Short-circuit TP5A to TP5B.
5. Observe the waveform at TP2J. (The probe must be grounded to TP2G.)
6. Set the oscilloscope's slope to (–).
7. Adjust VR4A0 so that the trigger point is located at 6.5 ± 1.0H before the vertical synchronizing signal.
8. Open-circuit TP5A to TP5B.

PCB-MAIN (Component side)



PCB-Y/C (Component side)



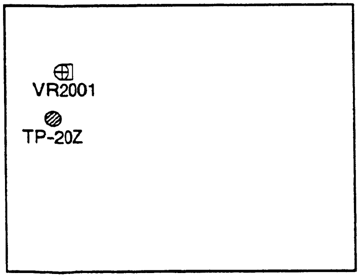


[Y/C signal circuit] 2. CG-AGC	**Adjustment purpose**	Setting output level of the CG circuit.
	Symptom when incorrectly adjusted	Too bright or too dark picture.

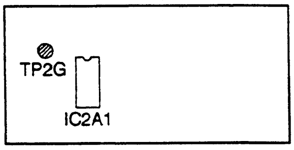
Measuring instrument and condition		**VCR set up condition**	
Oscilloscope		**Input signal**	Video signal (PAL colour bar)
Test point	TP-20Z	**Using tape**	---
EXT trigger	---	**VCR condition**	STOP
Measurement range	DIV 50mV TIM 10µs	**Using Jig**	---

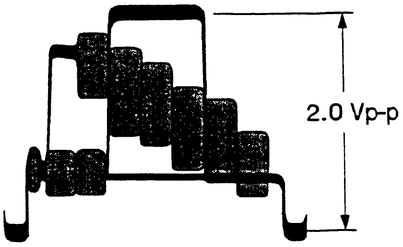
1. Supply a video signal (PAL colour bar).
2. Observe the waveform at TP-20Z.
3. Adjust VR2001 so that the amplitude of waveform is 2.0Vp-p.

PCB-MAIN (Component side)



PCB-Y/C (Component side)



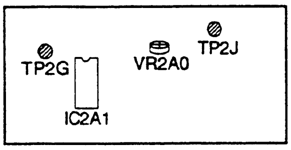


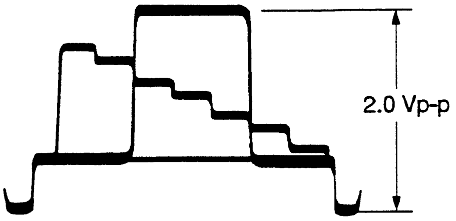
[Y/C signal circuit] 3. EE Out put Level	**Adjustment purpose**	To set output level of video signal at STOP mode.
	Symptom when incorrectly adjusted	Too bright or too dark image : incorrect colour.

Measuring instrument and condition		**VCR set up condition**	
Oscilloscope		**Input signal**	Video signal (PAL SPLIT FIELD)
Test point	TP2J	**Using tape**	---
EXT trigger	---	**VCR condition**	STOP
Measurement range	DIV 20mV TIM 50µs	**Using Jig**	---

1. Supply a video signal (PAL SPLIT FIELD).
2. Be certain that nothing is connected to the VIDEO OUT terminal.
3. Observe the waveform at TP2J. (The probe must be grounded to TP2G.)
4. Adjust VR2A0 so that the amplitude of waveform is 2.0Vp-p.

PCB-Y/C (Component side)


TP2J
TP2G
VR2A0
IC2A1

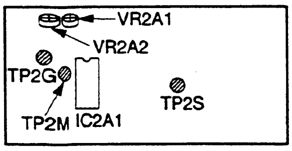


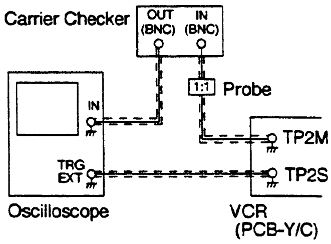
[Y/C signal circuit] 4. Carrier set, Deviation	**Adjustment purpose**	FM carrier frequency and deviation.
	Symptom when incorrectly adjusted	Too bright or too dark picture. Horizontal noise or less of sync.

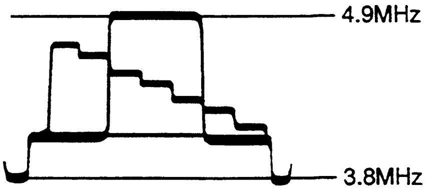
Measuring instrument and condition		**VCR set up condition**	
Oscilloscope (Probe 1:1)		**Input signal**	Video signal (PAL colour bar)
Test point	TP2M	**Using tape**	A tape
EXT trigger	TP2S	**VCR condition**	3H REC
Measurement range	DIV 0.2V TIM 10µs	**Using Jig**	Carrier Checker

1. Supply a video signal (PAL colour bar).
2. Set the VCR to 3H REC mode.
3. Observe the waveform at TP2M using a carrier checker. (The probe must be grounded to TP2G.)
4. Adjust VR2A1 so that the sync tip is at 3.8MHz.
5. Adjust VR2A2 so that the peak white is at 4.9MHz.

PCB-Y/C (Component side)


VR2A1
VR2A2
TP2G
TP2S
TP2M
IC2A1

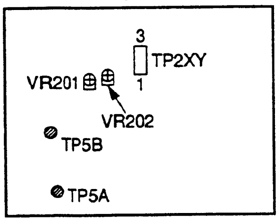

Carrier Checker
OUT (BNC)
IN (BNC)
1:1
Probe
IN
TRG EXT
TP2M
TP2S
Oscilloscope
VCR (PCB-Y/C)


4.9MHz
3.8MHz

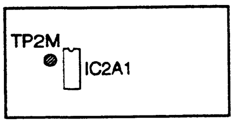
[Y/C signal circuit] 5. Y/C Recording Level	**Adjustment purpose**	Set the record level of the video and chroma signal.
	Symptom when incorrectly adjusted	Low luminance S/N, beats, colour bounding or flicker.

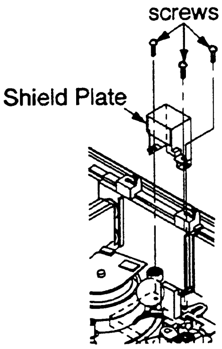
Measuring instrument and condition		**VCR set up condition**	
Oscilloscope (Probe 1:1)		**Input signal**	Video signal (PAL colour bar)
Test point	TP2XY (pin ①, pin ②)	**Using tape**	A tape
EXT trigger	---	**VCR condition**	6H REC
Measurement range	DIV 5mV TIM 5µs	**Using Jig**	---

PCB-MAIN (Component side)

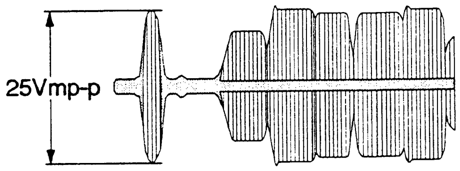


PCB-Y/C (Component side)

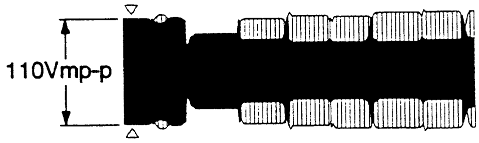




1. Remove the three screws and rise the Shield Plate upward to remove it as shown below.
2. Supply a video signal (PAL colour bar).
3. Short-circuit TP5A to TP5B.
4. Set the VCR to 6H REC mode.
5. Short-circuit TP2M to TP5B.
6. Observe the waveform at TP2XY (pin ① (GND), pin ②).
7. Turn VR202 fully counter-clockwise as seen from top side.
8. Adjust VR201 so that the Burst level is 25mVp-p.



9. Set the oscilloscope's probe to 10 : 1.
10. Open-circuit TP2M to TP5B.
11. Adjust VR202 so that the amplitude of horizontal sync is 110mVp-p.
12. Open-circuit TP5A to TP5B.

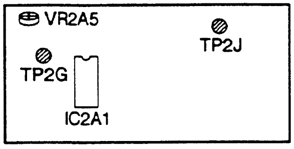


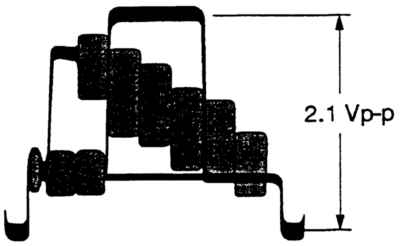
[Y/C signal circuit] 6. Playback Demodulation Sensitivity	**Adjustment purpose**	Setting each output level to the same when playing a tape recorded in VHS.
	Symptom when incorrectly adjusted	Both Y signal and colour signal will be played back incorrectly

Measuring instrument and condition		**VCR set up condition**	
Oscilloscope		**Input signal**	– – –
Test point	TP2J	**Using tape**	Alignment Tape (PS2, colour bar)
EXT trigger	– – –	**VCR condition**	3H Playback
Measurement range	DIV 20mV TIM 10µs	**Using Jig**	– – –

1. Set the VCR to 3H PLAY mode.
2. Be certain that nothing is connected to the VIDEO OUT terminal.
3. Play back an alignment tape (PS2, colour bar).
4. Observe the waveform at TP2J.
   (The probe must be grounded to TP2G.)
5. Adjust VR2A5 so that the amplitude of waveform is 2.1Vp-p.

PCB-Y/C (Component side)



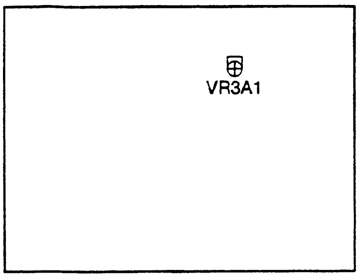


[Audio circuit] 7. Playback Audio Level	**Adjustment purpose**	Audio level during playback.
	Symptom when incorrectly adjusted	Too loud or too low audio level during playback.

Measuring instrument and condition		**VCR set up condition**	
Audio tester		**Input signal**	---
Test point	AUDIO OUT terminal	**Using tape**	Alignment Tape (PS2, colour bar)
EXT trigger	---	**VCR condition**	3H Playback
Measurement range	---	**Using Jig**	---

1. Set the VCR to 3H PLAY mode.
2. Play back an alignment tape (PS2, colour bar).
3. Observe the audio level at AUDIO OUT terminal.
4. Adjust VR3A1 so that the audio output level is -6dBm.
   Note: Check that the level fluctuation is less than ±1dB.if level fluctuation is over ±1dB then check the A/C HEAD slant adjustment.

PCB-MAIN (Component side)

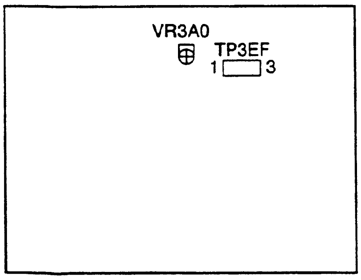


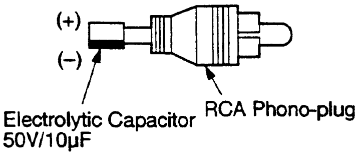
[Audio circuit] 8. Audio Bias level	**Adjustment purpose**	Audio bias level setting for record.
	Symptom when incorrectly adjusted	Poor audio response in high frequency area or distortion.

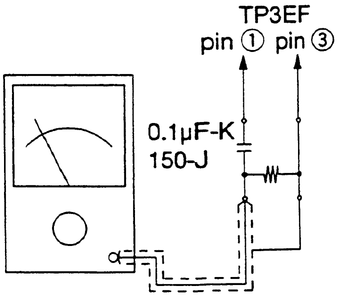
Measuring instrument and condition		**VCR set up condition**	
Audio tester		**Input signal**	---
Test point	TP3EF (pin ①, pin ③)	**Using tape**	A tape
EXT trigger	---	**VCR condition**	3H REC
Measurement range	---	**Using Jig**	High pass filter

1. Insert the shorted RCA type Phono-plug into the AUDIO IN terminal.
2. Set the VCR to 3H REC mode.
3. Observe the audio level at TP3EF (pin ①, pin ③) with an Audio Tester using a high pass filter.
4. Confirm that the monitor TV etc. does not affect the indication of the Audio Tester and then adjust VR3A0so that the level is 2.8mVr.m.s.
   Note 1: Be sure that the audio tester housing never touches the VCR chassis.
   Note 2: Never set the VCR to PLAY mode with the audio tester connected. (The audio amplifier will be over loaded.)

PCB-MAIN (Component side)



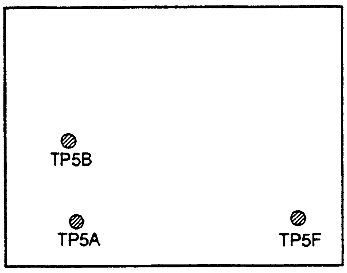




[Timer circuit] 9. Clock Frequency Correction	**Adjustment purpose**	To set the accuracy of the clock.
	Symptom when incorrectly adjusted	Poor clock accuracy.

Measuring instrument and condition		**VCR set up condition**	
Frequency Counter		**Input signal**	---
Test point	TP5F	**Using tape**	---
EXT trigger	---	**VCR condition**	Power off
Measurement range	---	**Using Jig**	---

PCB-MAIN (Component side)



1. Set the VCR to POWER off.
   (With the tape ejected from the VCR.)
2. Short-circuit TP5A to TP5B.
   (Confirm that the " REC " is displayed in fluorescent display.)
3. Observe the frequency at TP5F.
4. Be certain that the frequency is between 262.1000 ~ 262.1882kHz.
5. Use the Jog dial and Shuttle ring to enter the last three digits of the frequency counter reading (262.1ⓐⓑⓒkHz).
   Transfer to next subordinate figure's position, turn the shuttle-ring to clockwise direction and enter the digits in ⓐⓑⓒ sequence.
6. Push the REC button on the VCR.
7. Open-circuit TP5A to TP5B.
   (Confirm that the " REC " is not displayed in fluorescent display.)

MECHANICAL ADJUSTMENT AND REPLACEMENT

1. Cleaning the DECK

The following Parts require cleaning whenever serviced to maintain satisfactory performance.

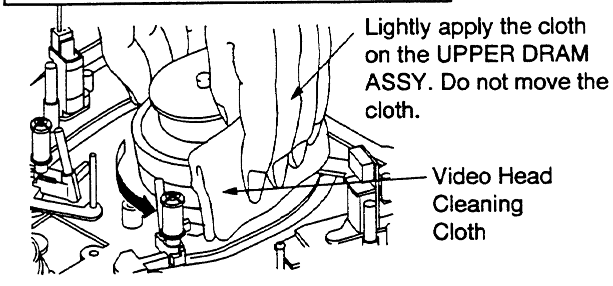
1-1. VIDEO HEAD

1. Clean the VIDEO HEADs by the following method.
   Dust and other foreign objects on the VIDEO HEADs disturb the normal play back picture.
   Dampen a Video Head Cleaning Cloth with alcohol.
   Hold the cloth against the DRUM and slowly turn the DRUM counterclockwise to clean.

Note : Do not directly touch the HEAD attached to the UPPER DRUM ASSY. The HEAD is very hard but brittle to impact, especially in the vertical direction.
Do not apply force in the vertical direction.

2. Allow residual alcohol to dry thoroughly before running a Tape. Otherwise, the liquid may stick to and damage the Tape.

UPPER DRUM ASSY cleaning


Lightly apply the cloth on the UPPER DRAM ASSY. Do not move the cloth.
Video Head Cleaning Cloth

1-2. Tape Transport (Refer to Fig. 1.)

Clean the following Parts of the Tape Transport.

1. TENSION PIN
2. GUIDE POLE (SP)
3. FE HEAD
4. SLANT POLE (SP)
5. UPPER/LOWER DRUM ASSY
6. SLANT POLE (TU)
7. A/C HEAD
8. GUIDE POLE (TU)
9. CAPSTAN SHAFT
10. GUIDE PIN (TU)
11. GUIDE ROLLER (SP)
12. GUIDE ROLLER (TU)
13. PINCH ROLLER

1. Clean the Tape Transport using Gauze dampened with alcohol, except the GUIDE ROLLER (SP), GUIDE ROLLER (TU) and PINCH ROLLER which Dry Gauze should be used.
2. Allow residual alcohol to dry thoroughly before running a Tape. Otherwise the liquid may stick to and damage the Tape.

1-3. REEL DISK Drive System

1. Clean the REEL DISK braking surfaces and the REEL BELT.
2. Clean the REEL DISK drive system using Gauze dampened with alcohol, except the REEL BELT. Use Dry Gauze to clean the the REEL BELT.
3. Allow residual alcohol to dry thoroughly before operation.

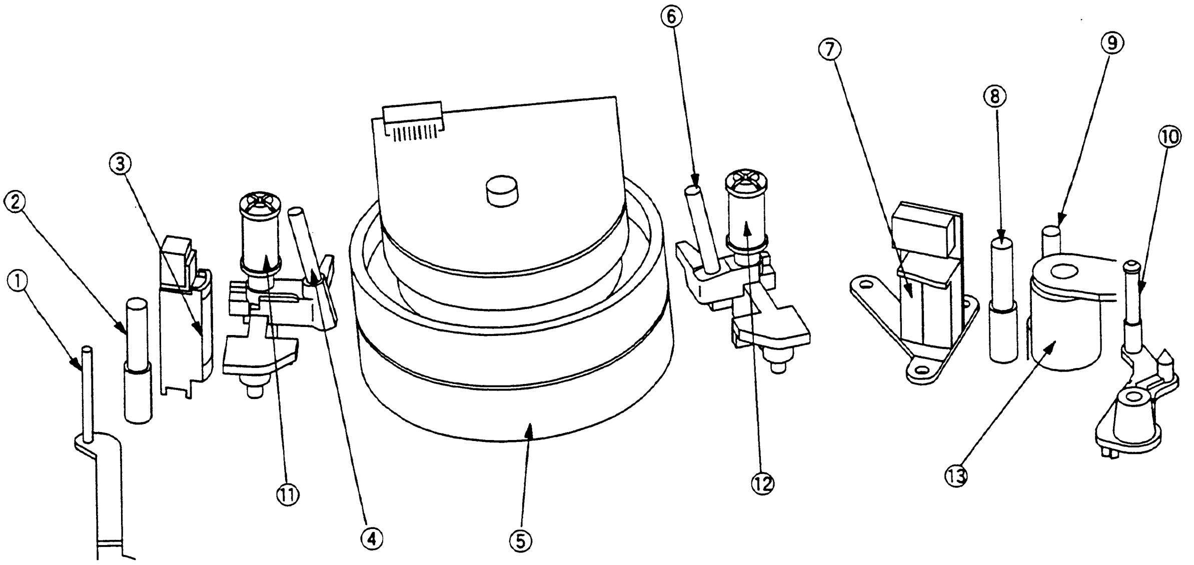


Fig. 1

2. Replacement of Major Parts

2-1. GUIDE ARM (SP), CLEANING ARM, CLEANING ROLLER UNIT

SET POSITION : Normal

(Removal)

1. Disconnect the Lead Connector from the FE HEAD, which is clamped on the GUIDE ARM (SP) shown in Fig. 2-1.
2. Unfasten the Catch (ⓐ) of the GUIDE ARM (SP) shown in Fig. 2-1 to remove the GUIDE ARM (SP).
3. Unfasten the Catch (ⓑ) of the CLEANING ARM shown in Fig. 2-1 to remove the CLEANING ARM.
4. Unfasten the Catch (ⓒ) of the CLEANING ARM shown in Fig. 2-1 to remove the CLEANING ROLLER UNIT from the CLEANING ARM.

(Installation)

1. Install the CLEANING ROLLER UNIT shown in Fig. 2-1 to the CLEANING ARM.
2. Install the CLEANING ARM shown in Fig. 2-1.
3. Install the GUIDE ARM (SP) shown in Fig. 2-1.
4. Connect the Lead Connector from the FE HEAD.

2-2. STAY PLATE

SET POSITION : Normal

(Removal)

1. Unfasten a LID HOLDER PLATE fastening screw (ⓐ) shown in Fig. 2-2. Remove the LID HOLDER PLATE.
2. Raise the STAY PLATE in the direction shown by arrow Ⓐ so that it stands completely in vertical, as shown in Fig. 2-2. Remove the STAY PLATE in the direction shown by arrow Ⓑ.

(Installation)

1. Install the STAY PLATE and the LID HOLDER PLATE shown in Fig. 2-2.

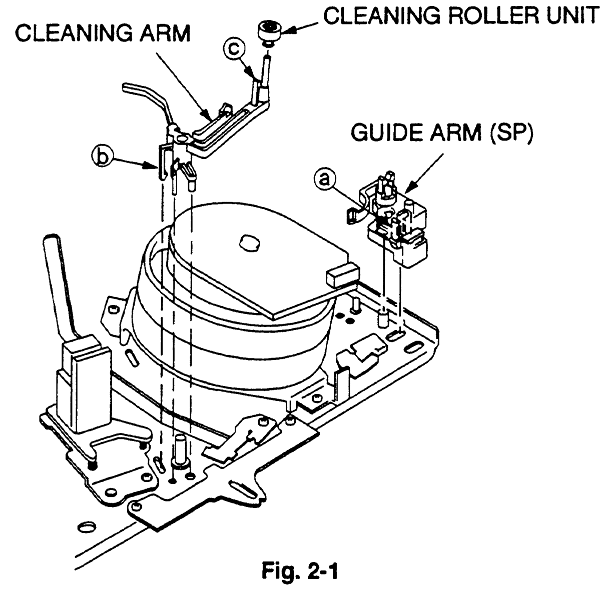


Fig. 2-1

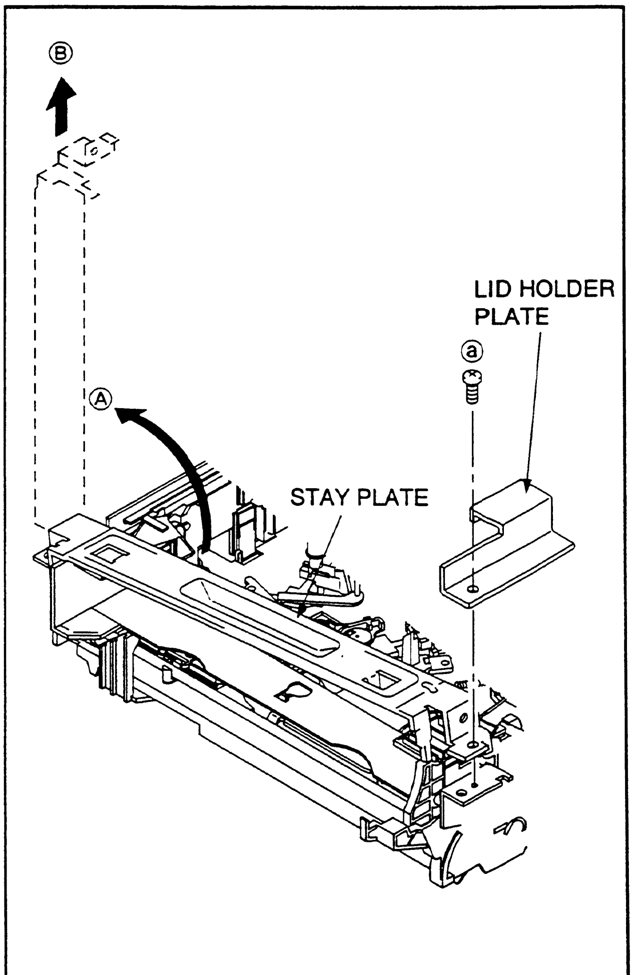


Fig. 2-2

2-3. BOTTOM UNIT

SET POSITION : Normal

(Removal)

1. Remove the STAY PLATE. (Refer to Para. 2-2.)
2. Remove the BOTTOM UNIT in the direction shown by arrow as shown in Fig. 2-3-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the Groove of the MAIN PLATE ASSY specified in Fig. 2-3-5.
2. Apply GREASE (MULTEMP SH-A) [859D055080] to the BOTTOM UNIT specified in Fig. 2-3-5.
3. Move the LID HOOK (TU) shown in Fig. 2-3-2 in the direction shown by arrow Ⓐ.
4. Move the LID HOOK (TU) and the LID OPENER (TU) in the direction shown by arrow Ⓑ in Fig. 2-3-3 so that the boss of the LID HOOK (TU) shown in Fig. 2-3-2 is inserted in the Matching Groove on the CASSETTE HOLDER (TU).
5. Move the LID OPENER (SP) of the BOTTOM UNIT in the direction shown by arrow Ⓐ and hold it with your hand as shown in Fig. 2-3-3.
6. Insert a Cassette Tape in the BOTTOM UNIT shown in Fig. 2-3-3 with the LID OPENER (TU) held down with the hands.

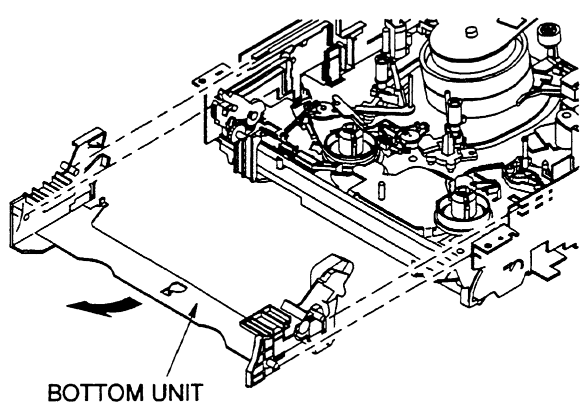

BOTTOM UNIT

Fig. 2-3-1

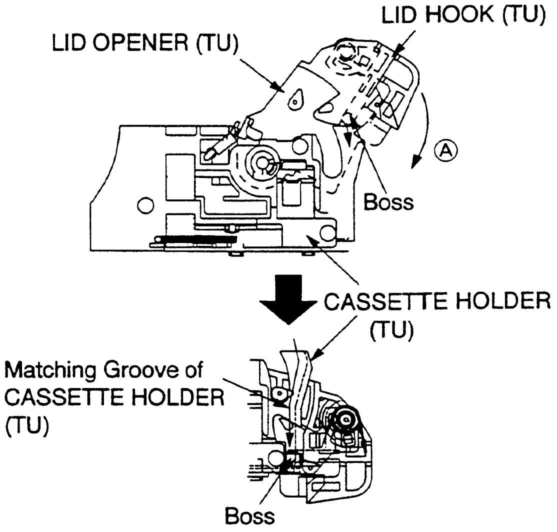

LID HOOK (TU)
LID OPENER (TU)
Ⓐ
Boss
CASSETTE HOLDER (TU)
Matching Groove of CASSETTE HOLDER (TU)
Boss

Fig. 2-3-2

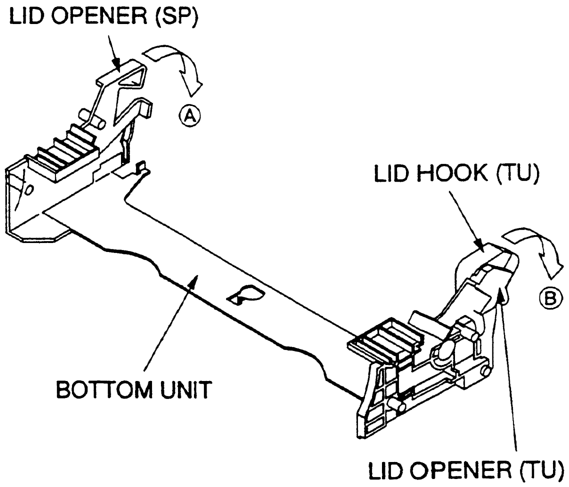

LID OPENER (SP)
Ⓐ
LID HOOK (TU)
Ⓑ
BOTTOM UNIT
LID OPENER (TU)

Fig. 2-3-3

7. Make sure that the Catches of the LID HOOK (TU) and the LID OPENER (SP) shown in Fig. 2-3-4 are fastened on the Cassette Tape.
8. Install the BOTTOM UNIT so that its boss matches with the groove of the MAIN PLATE ASSY as shown in Fig. 2-3-5.
9. Remove the Cassette Tape.
10. Install the STAY PLATE. (Refer to Para. 2-2.)

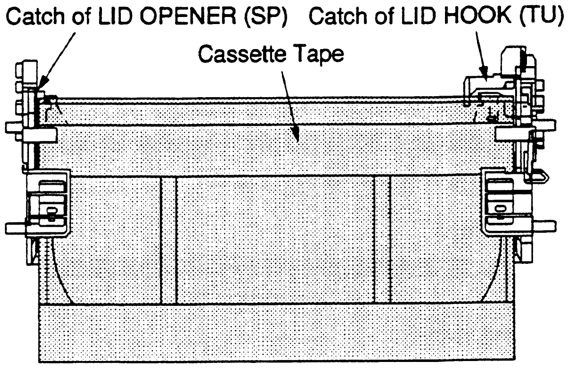

Catch of LID OPENER (SP)
Catch of LID HOOK (TU)
Cassette Tape

Fig. 2-3-4

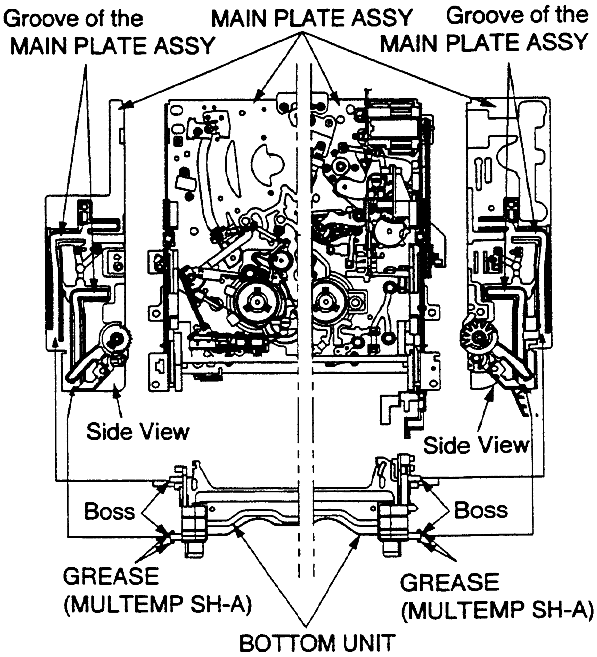

Groove of the MAIN PLATE ASSY
MAIN PLATE ASSY
Groove of the MAIN PLATE ASSY
Side View
Side View
Boss
Boss
GREASE (MULTEMP SH-A)
GREASE (MULTEMP SH-A)
BOTTOM UNIT

Fig. 2-3-5

2-4. A/C HEAD UNIT

SET POSITION : Normal

(Removal)

1. Disconnect the Card Lead Wire of the A/C HEAD UNIT shown in Fig. 2-4-1.
2. Unscrew the two A/C HEAD UNIT fastening screws (ⓐ) to remove the A/C HEAD UNIT.

(Installation)

1. Install the A/C HEAD UNIT shown in Fig. 2-4-1.

Note : Do not touch the part shown in Fig.2-4-2.
If it is stained, clean it with alcohol.

2. Connect the Card Lead Wire of the A/C HEAD UNIT shown in Fig. 2-4-1.
3. Perform "Adjustment of A/C HEAD" in Para. 3-3 and "Adjustment of Phase" in Para. 3-4 of "Interchangeability Adjustment of the Mechanism".

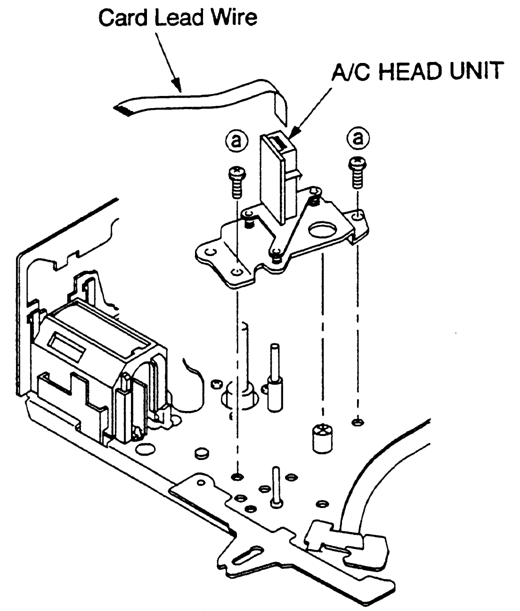


Fig. 2-4-1

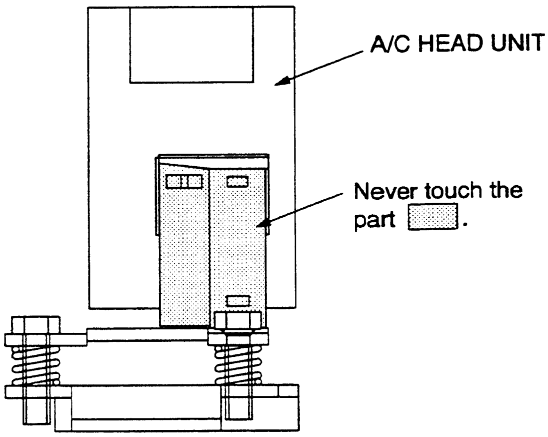


Fig. 2-4-2

2-5. FE HEAD

SET POSITION : Normal

(Removal)

1. Disconnect the Lead Connector of the FE HEAD shown in Fig. 2-5-1.
2. Unscrew the FE HEAD fastening screw (ⓐ) to remove the FE HEAD.

(Installation)

1. Install the FE HEAD shown in Fig. 2-5-1.

Note : Do not touch the part shown in Fig. 2-5-2.
If it is stained, clean it with alcohol.

2. Connect the Lead Connector of the FE HEAD shown in Fig. 2-5-1.

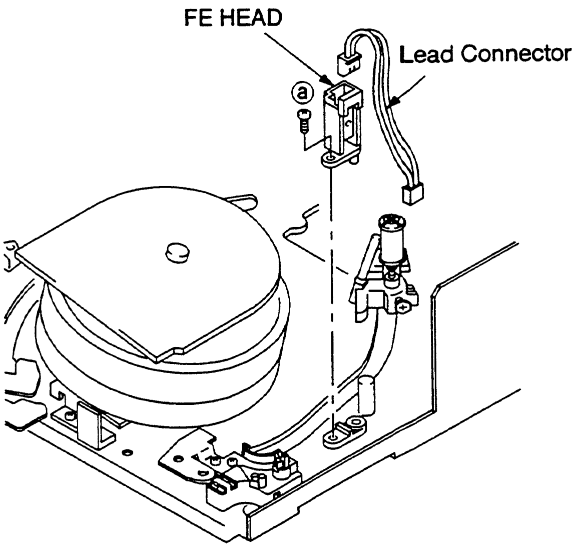


Fig. 2-5-1

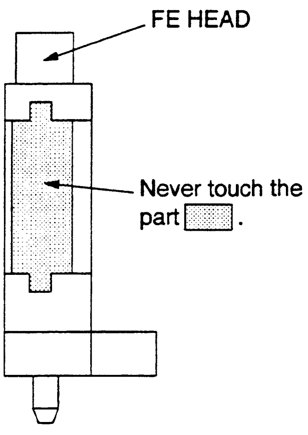

FE HEAD
Never touch the part ▨.

Fig. 2-5-2

2-6. SHUT LEVER UNIT

SET POSITION : Normal

To access the SHUT LEVER UNIT, remove the :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)

(Removal)

1. To remove the SHUT LEVER UNIT, unfasten the two Catches (ⓐ) of the SHUT LEVER UNIT shown in Fig. 2-6-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-6-1 on the MAIN PLATE ASSY.
2. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-6-1 on the new SHUT LEVER UNIT.
3. Install the SHUT LEVER UNIT shown in Fig. 2-6-1.
4. Insert the spring of the SHUT LEVER UNIT under Groove of the MAIN PLATE ASSY shown in Fig. 2-6-2.
5. Make sure that the SHUT LEVER UNIT returns in the direction shown by arrow Ⓑ when it is moved in the direction shown by arrow Ⓐ.

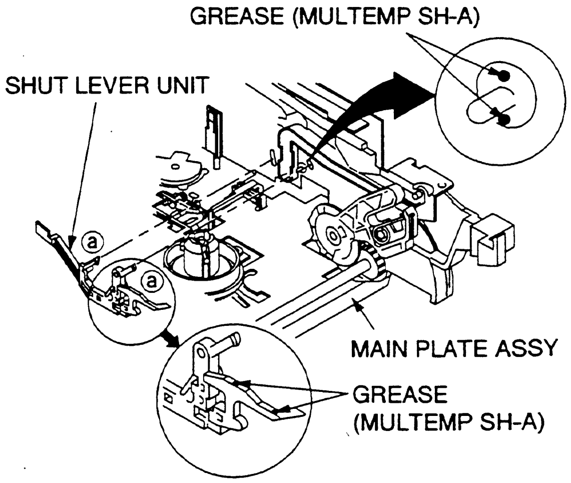

GREASE (MULTEMP SH-A)
SHUT LEVER UNIT
ⓐ
ⓐ
MAIN PLATE ASSY
GREASE (MULTEMP SH-A)

Fig. 2-6-1

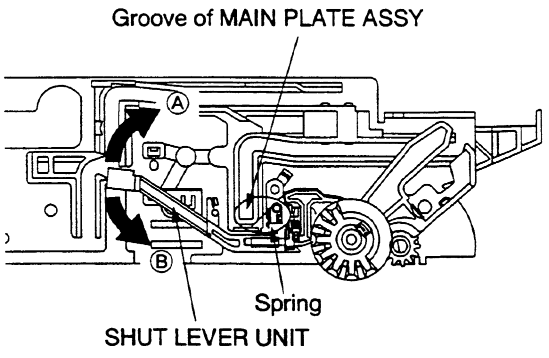

Groove of MAIN PLATE ASSY
Ⓐ
Ⓑ
Spring
SHUT LEVER UNIT

Fig. 2-6-2

2-7. LAMP GUIDE, MODE POSITION GUIDE

SET POSITION : Normal

(Removal)

1. Unscrew the LAMP GUIDE fastening screw (ⓐ) shown in Fig. 2-7-1.
2. Unfasten the Catch (ⓑ) of the MAIN PLATE ASSY shown in Fig. 2-7-1 to remove the LAMP GUIDE.
3. Unfasten the Catch (ⓒ) of the MODE POSITION GUIDE shown in Fig. 2-7-1 to remove the MODE POSITION GUIDE.

(Installation)

1. Clean the Part A of the MODE POSITION GUIDE shown in Fig. 2-7-2 with the Video Head Cleaning Cloth.

Note : Never use alcohol or equivalent solvent.

2. Install the MODE POSITION GUIDE shown in Fig. 2-7-1.
3. Clean the Part B of the LAMP GUIDE shown in Fig. 2-7-2 with the Video Head Cleaning Cloth.

Note : Never use alcohol or equivalent solvent.

4. Install the LAMP GUIDE shown in Fig. 2-7-1.
5. Install the screw (ⓐ) shown in Fig. 2-7-1.
6. After installing the LAMP GUIDE and MODE POSITION GUIDE, clean the surface of them with the Video Head Cleaning Cloth.

Note : Never use alcohol or equivalent solvent.

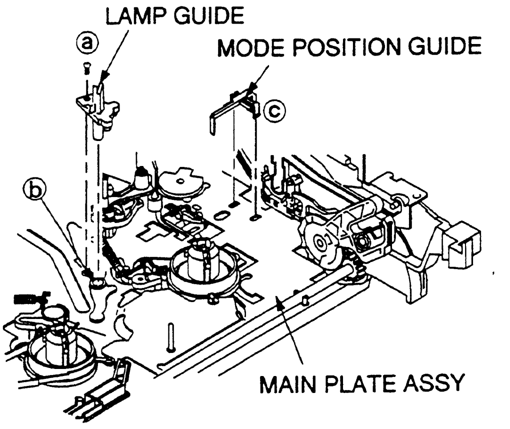


Fig. 2-7-1

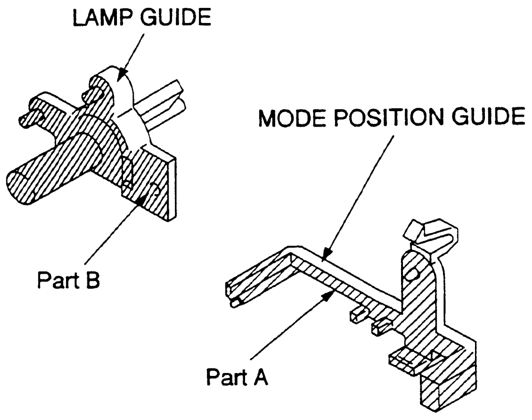


Fig. 2-7-2

2-8. TENSION SPRING, TENSION ARM, TENSION BELT UNIT

SET POSITION : Normal

(Removal)

1. Remove the TENSION SPRING shown in Fig. 2-8-1.
2. Use a minus driver to move Part A of the MAIN PLATE ASSY, shown in Fig. 2-8-3, in the direction shown by arrow Ⓐ.
3. Unfasten the two Catches (ⓐ) of the TENSION BELT UNIT shown in Fig. 2-8-1. Unfasten the Catch (ⓑ) of the MAIN PLATE ASSY. Remove the TENSION BELT UNIT with the TENSION ARM attached.
4. Unfasten the two Catches (ⓒ) of the TENSION BELT UNIT shown in Fig. 2-8-2 to remove the TENSION ARM .

(Installation)

1. Attach the TENSION ARM on the TENSION BELT UNIT, refer to Fig. 2-8-2.
2. Fasten the TENSION BELT UNIT around the part of the REEL DISK (on SP side), refer to Fig. 2-8-3.

Note : Do not get GREASE or OIL on the TENSION BELT UNIT during installation.

3. Move the Part A of the spring of the TENSION LEVER UNIT, shown in Fig. 2-8-4, in the direction shown by arrow, and install the TENSION ARM in the position shown in Fig. 2-8-4.
4. Move the Part A of the MAIN PLATE ASSY in the opposite direction of arrow Ⓐ so it enters the concave portion of the TENSION BELT UNIT, as shown in Fig. 2-8-3, and points to the centre of the REEL DISK (On SP side).
5. Install the TENSION SPRING shown in Fig. 2-8-1.
6. Perform "Adjustment of BACK TENSION and TENSION PIN Position" in Para. 3-1 of "Interchangeability Adjustment of the Mechanism".

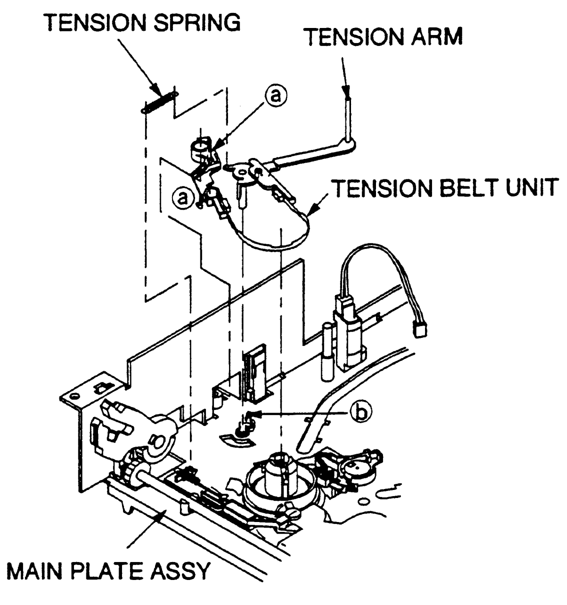


Fig. 2-8-1

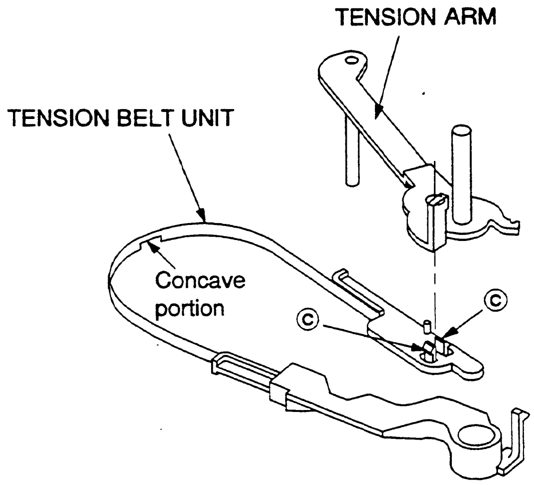


Fig. 2-8-2

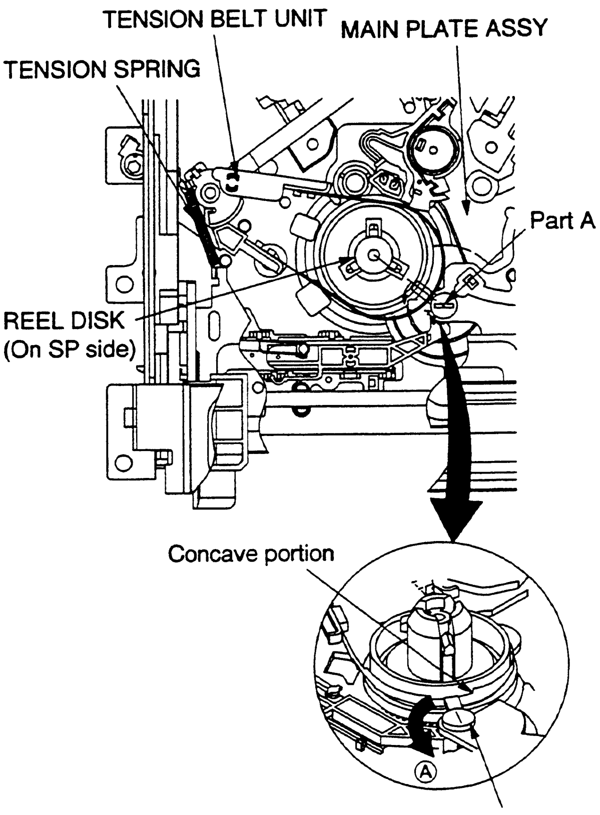

TENSION BELT UNIT
MAIN PLATE ASSY
TENSION SPRING
Part A
REEL DISK
(On SP side)
Concave portion
Ⓐ
Part A

Fig. 2-8-3

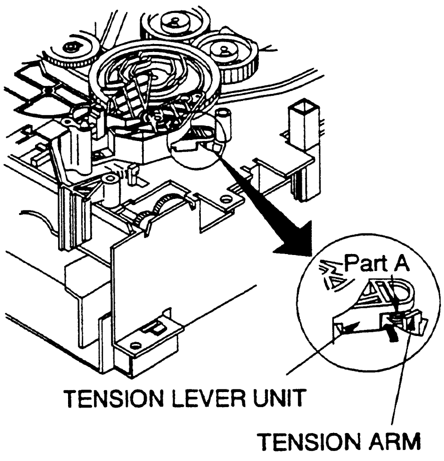

Part A
TENSION LEVER UNIT
TENSION ARM

Fig. 2-8-4

2-9. BRAKE SPRING (for MAIN BRAKE (SP)), MAIN BRAKE (SP), BRAKE SPRING (for MAIN BRAKE (TU)), MAIN BRAKE (TU)

SET POSITION : Normal

(Removal)

1. Remove the BRAKE SPRING (for MAIN BRAKE (SP)) shown in Fig. 2-9.
2. Use tweezer to unfasten Catch (ⓐ) of the MAIN BRAKE and remove the MAIN BRAKE (SP), refer to Fig 2-9.
3. Remove the BRAKE SPRING (for MAIN BRAKE (TU)) shown in Fig. 2-9.
4. Unfasten the Catch (ⓑ) of the MAIN BRAKE (TU) shown, in Fig. 2-9, to remove the MAIN BRAKE (TU).

(Installation)

1. Install the MAIN BRAKE (TU) shown in Fig. 2-9.
2. Install the BRAKE SPRING (for MAIN BRAKE (TU)) shown in Fig. 2-9.
3. Install the MAIN BRAKE (SP) shown in Fig. 2-9.
4. Install the BRAKE SPRING (for MAIN BRAKE (SP)) shown in Fig. 2-9.

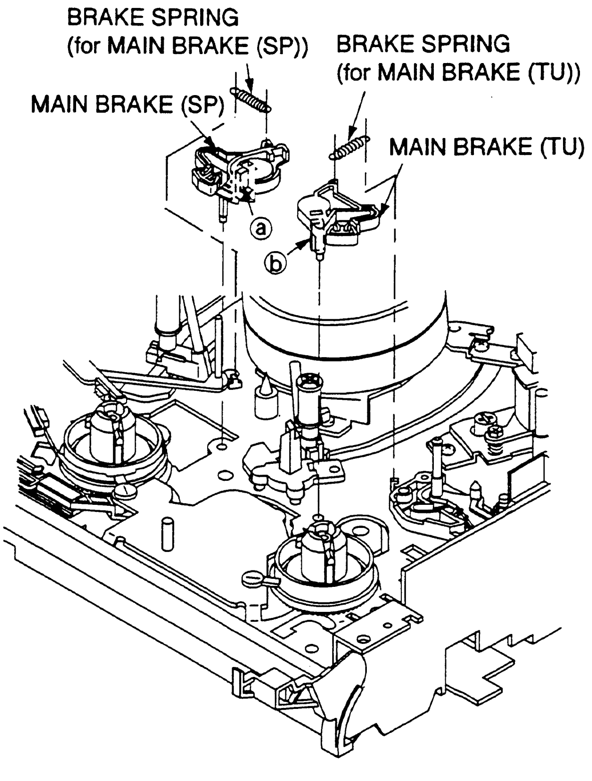

BRAKE SPRING
(for MAIN BRAKE (SP))
BRAKE SPRING
(for MAIN BRAKE (TU))
MAIN BRAKE (SP)
MAIN BRAKE (TU)
ⓐ
ⓑ

Fig. 2-9

2-10. REEL DISK (On SP side), REEL DISK (On TU side)

SET POSITION : Normal

To access the REEL DISK, remove the following parts :

- TENSION SPRING (Para. 2-8)
- TENSION ARM (Para. 2-8)
- TENSION BELT UNIT (Para. 2-8)

(Removal)

1. Move the MAIN BRAKE (SP) in the direction shown by arrow Ⓐ hold it in that position. Remove the REEL DISK (On SP side) as shown in Fig. 2-10-1.
2. Use a minus driver to move Part B in the direction shown by arrow Ⓑ, as shown in Fig. 2-10-1.
3. Move the MAIN BRAKE (TU) in the direction shown by arrow Ⓒ hold it in that position. Remove the REEL DISK (On TU side) as shown in Fig. 2-10-1.

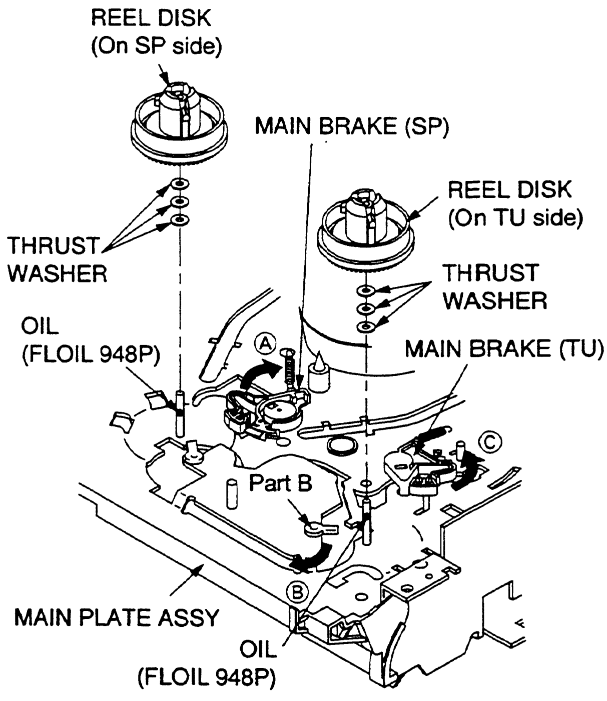

REEL DISK
(On SP side)
MAIN BRAKE (SP)
REEL DISK
(On TU side)
THRUST
WASHER
THRUST
WASHER
OIL
(FLOIL 948P)
Ⓐ
MAIN BRAKE (TU)
Ⓒ
Part B
Ⓑ
MAIN PLATE ASSY
OIL
(FLOIL 948P)

Fig. 2-10-1

(Installation)

1. Apply OIL (FLOIL 948P) [859D154020] to the shaft, shown in Fig. 2-10-1, for the REEL DISK (On SP side) on the MAIN PLATE ASSY.
2. Install the REEL DISK (On SP side) shown in Fig. 2-10-1.
3. Place the height adjustment jig [MASTER PLANE] (859C342020) shown in Fig. 2-10-2 in the reference position.
   (Position the MASTER PLANE so that the points A, B and C of the MAIN PLATE ASSY support it.)
4. Place the height adjustment jig [SQUARE] (859C433060) shown in Fig. 2-10-2 on the MASTER PLANE. Move it to the position shown in Fig. 2-10-3 and make sure that A can pass, but B cannot pass, under the REEL DISK (On SP side).
5. If the height of the REEL DISK (On SP side) is not correct, adjust the height by removing, or adding, a THRUST WASHER to the shaft, under the REEL DISK (On SP side).
   - If it is high, remove THRUST WASHER.
   - If it is low, add THRUST WASHER.
6. Install the TENSION BELT UNIT, TENSION ARM and TENSION SPRING.
   (Refer to Para. 2-8 for the installation method.)
7. Make sure that the REEL DISK (On SP side), shown in Fig. 2-10-1 cannot come off.
8. Apply OIL (FLOIL 948P) [859D154020] to the shaft, shown in Fig. 2-10-1, for the REEL DISK (On TU side) on the MAIN PLATE ASSY.
9. Install the REEL DISK (On TU side) shown in Fig. 2-10-1.
10. Install the height adjustment jig [MASTER PLANE] (859C342020) shown in Fig. 2-10-2 in the reference position.
    (Position the MASTER PLANE so that the points A, B and C of the MAIN PLATE ASSY support it.)
11. Place the height adjustment jig [SQUARE] (859C433060) shown in Fig. 2-10-2 on the MASTER PLANE. Move it to the position shown in Fig. 2-10-4 and make sure that A can pass, but B cannot pass, under the REEL DISK (On TU side).
12. If the height of the REEL DISK (On TU side) is not correct, adjust the height by removing, or adding, a THRUST WASHER to the shaft under the REEL DISK (On TU side).
    - If it is high, remove THRUST WASHER.
    - If it is low, add THRUST WASHER.
13. Move Part B of the MAIN PLATE ASSY in the opposite direction of arrow Ⓑ, as shown in Fig. 2-10-1 so that it points to the centre of the REEL DISK (On TU side).
14. Make sure that the REEL DISK (On TU side) shown in Fig. 2-10-1 cannot come off.

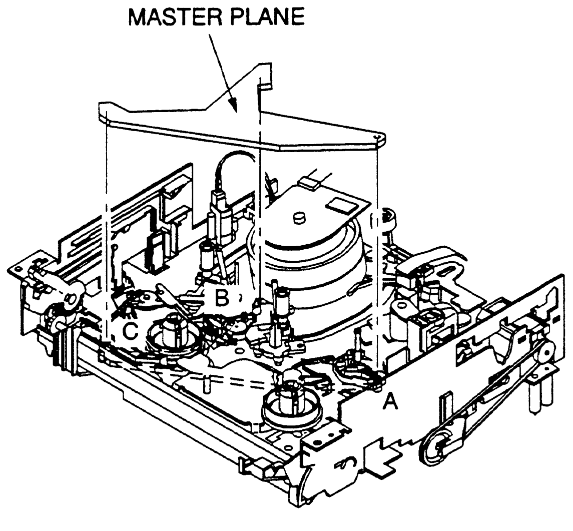


Fig. 2-10-2

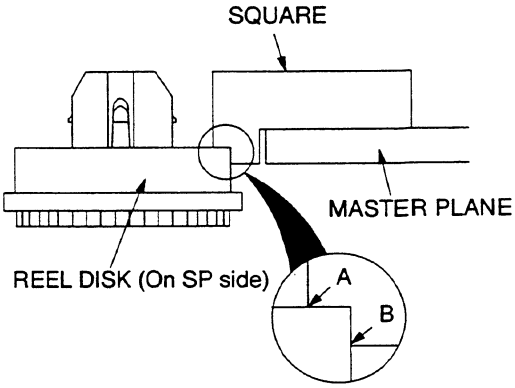


Fig. 2-10-3

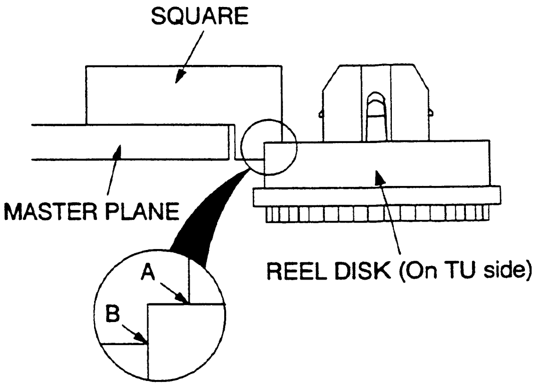


Fig. 2-10-4

2-11. LOADING BELT, LOADING MOTOR ASSY

SET POSITION : Normal

(Removal)

1. Remove the LOADING BELT shown in Fig. 2-11-1.
2. To remove the two LOADING MOTOR ASSY unfasten Catches (ⓐ) of the LOADING MOTOR ASSY, shown in FIg. 2-11-2, and unfasten the two Catches (ⓑ).

(Installation)

1. Install the LOADING MOTOR ASSY shown in Fig. 2-11-2.
2. Fasten the LOADING BELT shown in Fig. 2-11-1.

Note : Do not get GREASE or OIL on the LOADING BELT during installation.

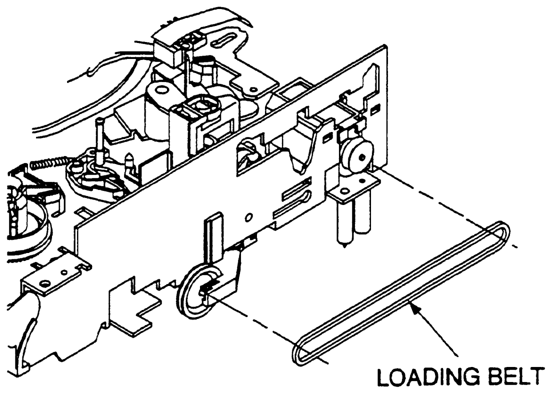


Fig. 2-11-1

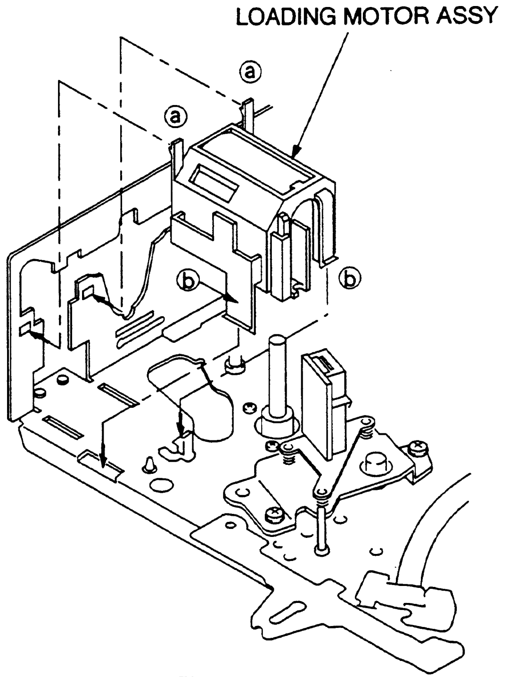


Fig. 2-11-2

2-12. PINCH ARM CAP 2, PINCH ARM UNIT, PINCH GEAR ARM 2, PINCH CAM HOLDER, PINCH CAM SPRING, PINCH CAM LEVER, PINCH RACK SLIDER, PINCH CAM GEAR

SET POSITION : Normal

(Removal)

1. Use tweezers to unfasten the two Catches (ⓐ) of the PINCH ARM CAP 2 shown in Fig. 2-12-1, and remove the PINCH ARM CAP 2.
2. Move the PINCH ARM UNIT in the direction shown by arrow Ⓐ to remove it as shown in Fig. 2-12-1.
3. Remove the PINCH GEAR ARM 2 shown in Fig. 2-12-1.
4. Remove the PINCH CAM SPRING shown in Fig. 2-12-1.
5. Remove the PINCH CAM LEVER shown in Fig. 2-12-1.
6. Unfasten the Catch (ⓑ) of the PINCH RACK SLIDER shown in Fig. 2-12-1. Move the PINCH RACK SLIDER in the direction shown by arrow Ⓑ to remove it.
7. Remove the screw (Ⓒ) of the PINCH CAM HOLDER shown in Fig. 2-12-1, to remove the PINCH CAM HOLDER.
8. Remove the PINCH CAM GEAR shown in Fig. 2-12-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-12-2 on the new PINCH CAM GEAR.

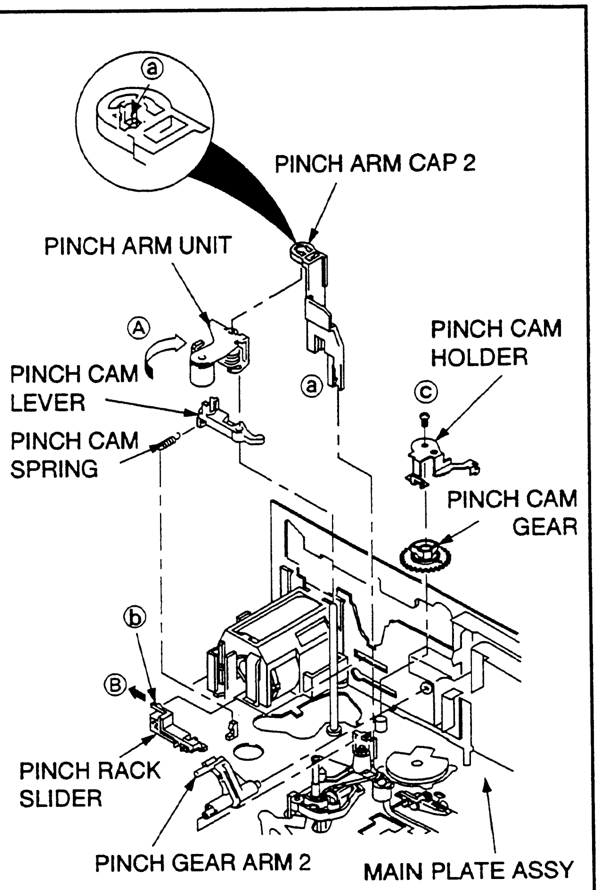

ⓐ
PINCH ARM CAP 2
PINCH ARM UNIT
Ⓐ
PINCH CAM LEVER
ⓐ
PINCH CAM HOLDER
Ⓒ
PINCH CAM SPRING
PINCH CAM GEAR
ⓑ
Ⓑ
PINCH RACK SLIDER
PINCH GEAR ARM 2
MAIN PLATE ASSY

Fig. 2-12-1

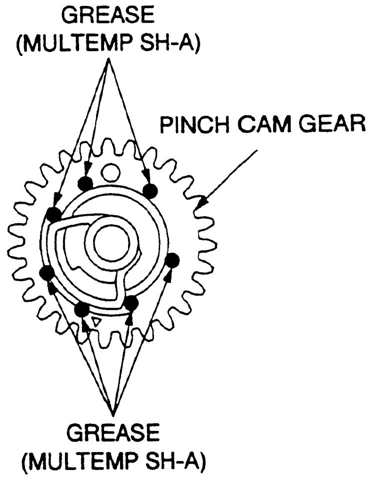

GREASE
(MULTEMP SH-A)
PINCH CAM GEAR
GREASE
(MULTEMP SH-A)

Fig. 2-12-2

2. Set the PINCH CAM GEAR so that the Δ mark on it matches with the Δ mark on the PINCH WORM GEAR as shown in Fig. 2-12-3 and install it.
3. Install the PINCH CAM HOLDER on the position shown in Fig. 2-12-4.
4. Move the PINCH RACK SLIDER in the direction shown by arrow in Fig. 2-12-5.
5. Make sure that the Catch (ⓓ) of the PINCH RACK SLIDER enters the Hole of the MAIN PLATE ASSY, as shown in Fig. 2-12-5.
6. Install the PINCH CAM LEVER shown in Fig. 2-12-1.
7. Install the PINCH CAM SPRING shown in Fig. 2-12-1.

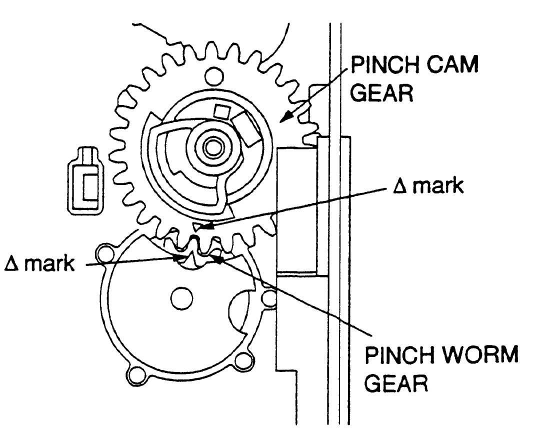

PINCH CAM GEAR
Δ mark
Δ mark
PINCH WORM GEAR

Fig. 2-12-3

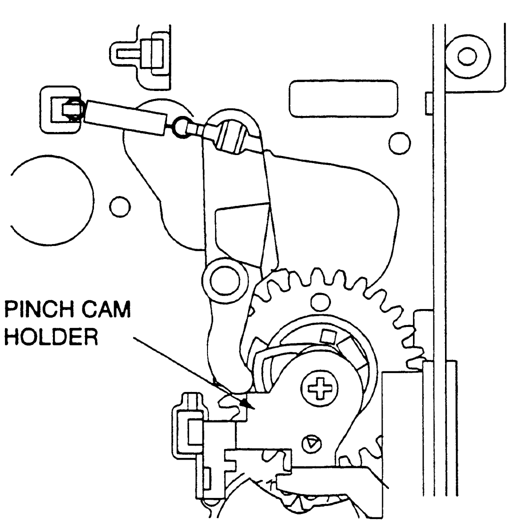

PINCH CAM HOLDER

Fig. 2-12-4

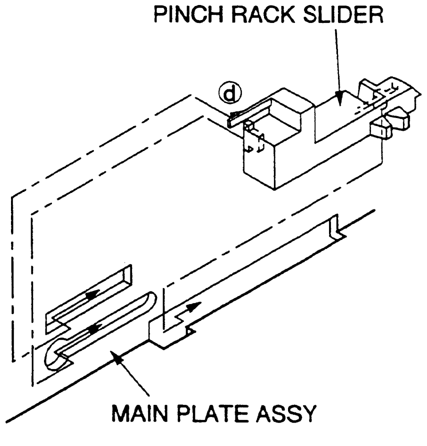

PINCH RACK SLIDER
ⓓ
MAIN PLATE ASSY

Fig. 2-12-5

8. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-12-6 on the new PINCH GEAR ARM 2.
9. Install the PINCH GEAR ARM 2 shown in Fig. 2-12-7 so that the boss of the PINCH GEAR ARM 2 and the shaft of the MAIN PLATE ASSY are positioned as shown.
10. Move the PINCH ARM UNIT in the opposite direction of arrow Ⓐ to install it as shown in Fig. 2-12-1.
11. Install the PINCH ARM CAP 2 shown in Fig. 2-12-1.

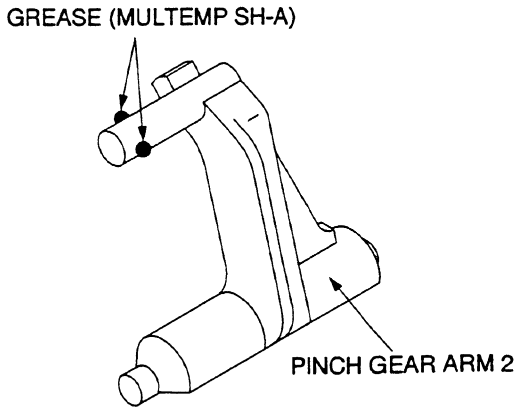

GREASE (MULTEMP SH-A)
PINCH GEAR ARM 2

Fig. 2-12-6

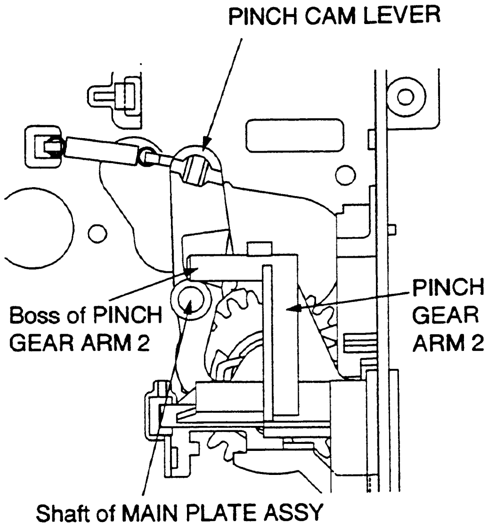

PINCH CAM LEVER
Boss of PINCH GEAR ARM 2
PINCH GEAR ARM 2
Shaft of MAIN PLATE ASSY

Fig. 2-12-7

2-13. GUIDE ARM ASSY (TU), GUIDE SPRING (TU), LOADING TG LEVER

SET POSITION : Normal

(Removal)

1. Remove the NYLON NUT, shown in Fig. 2-13-1 to remove the SL WASHER (ⓐ), the GUIDE ARM ASSY (TU) and GUIDE SPRING (TU).
2. Remove the CUT WASHER (ⓑ) holding the LOADING TG LEVER shown in Fig. 2-13-1.
3. To remove the two LOADING TG LEVER unfasten Catches (ⓒ) of the LOADING TG LEVER shown in Fig. 2-13-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-13-2 on the new LOADING TG LEVER.
2. Install the LOADING TG LEVER shown in Fig. 2-13-1.
3. Install the CUT WASHER (ⓑ) shown in Fig. 2-13-1 to fasten the LOADING TG LEVER.

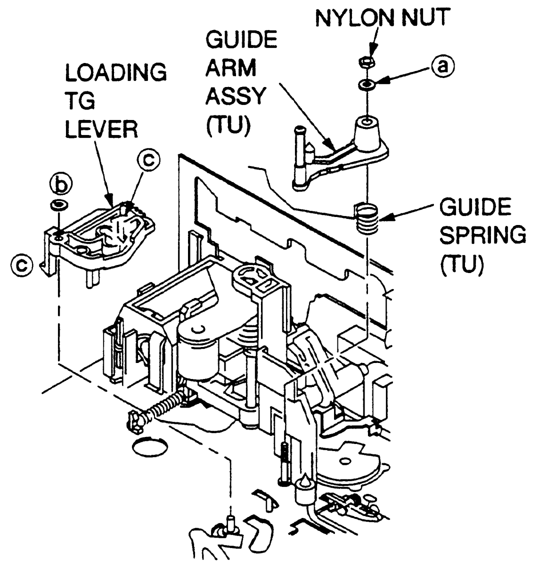

NYLON NUT
GUIDE ARM ASSY (TU)
LOADING TG LEVER
ⓐ
ⓑ
ⓒ
ⓒ
GUIDE SPRING (TU)

Fig. 2-13-1

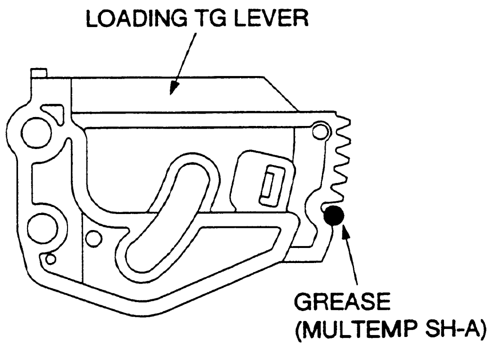

LOADING TG LEVER
GREASE (MULTEMP SH-A)

Fig. 2-13-2

4. Fix the GUIDE SPRING (TU) to the GUIDE ARM ASSY (TU) as shown in Fig. 2-13-3.
5. Fix the GUIDE ARM ASSY (TU) with the GUIDE SPRING (TU) attached, to the shaft of the MAIN PLATE ASSY, as shown in Fig. 2-13-1.
6. Install the GUIDE SPRING (TU) on the position shown in Fig. 2-13-4.

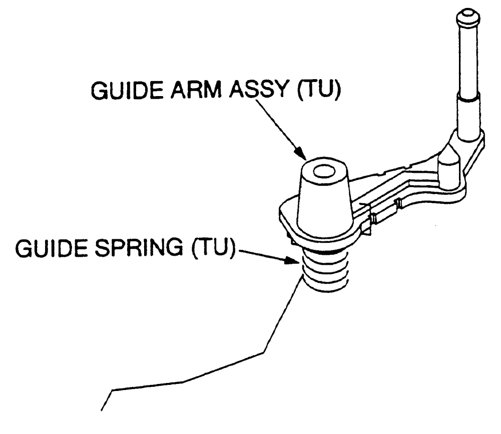

GUIDE ARM ASSY (TU)
GUIDE SPRING (TU)

Fig. 2-13-3

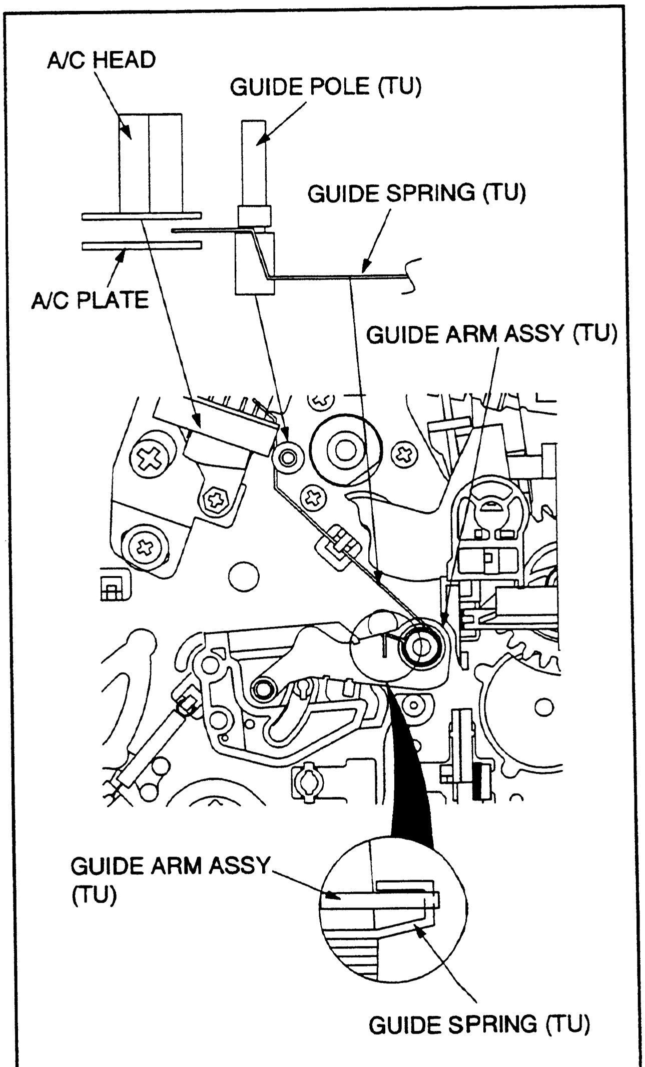

A/C HEAD
GUIDE POLE (TU)
GUIDE SPRING (TU)
A/C PLATE
GUIDE ARM ASSY (TU)
GUIDE ARM ASSY (TU)
GUIDE SPRING (TU)

Fig. 2-13-4

7. Install the GUIDE ARM ASSY (TU) so that the first tooth of the GEAR of the GUIDE ARM ASSY (TU), shown in Fig. 2-13-5, matches with Hole Ⓐ of the LOADING TG LEVER.
8. Install the SL WASHER (ⓐ) and NYLON NUT shown in Fig. 2-13-1.
9. Perform "Adjustment of GUIDE ARM ASSY (TU) Height" in Para. 3-5 of "Interchangeability Adjustment of the Mechanism".

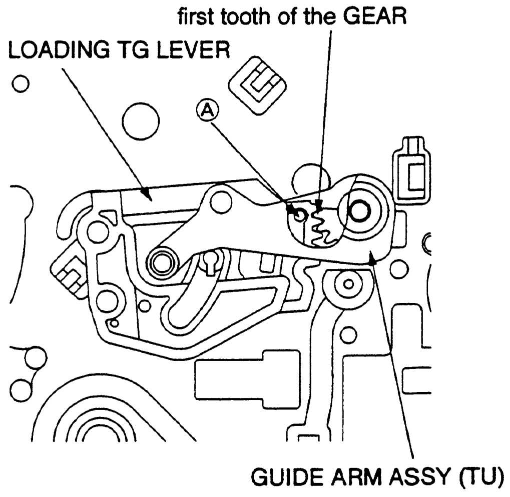

first tooth of the GEAR
LOADING TG LEVER
Ⓐ
GUIDE ARM ASSY (TU)

Fig. 2-13-5

2-14. REC SPRING, REC LEVER

SET POSITION : Upside down

(Removal)

1. Remove the REC SPRING shown in Fig. 2-14.
2. Move the REC LEVER in the direction shown by arrow Ⓐ until it strikes on the MAIN PLATE ASSY and remove it as shown in Fig. 2-14.

(Installation)

1. Insert the Catch of the REC LEVER, shown in Fig. 2-14, into the Hole of the MAIN PLATE ASSY and install the REC LEVER.
2. Install the REC SPRING shown in Fig. 2-14.

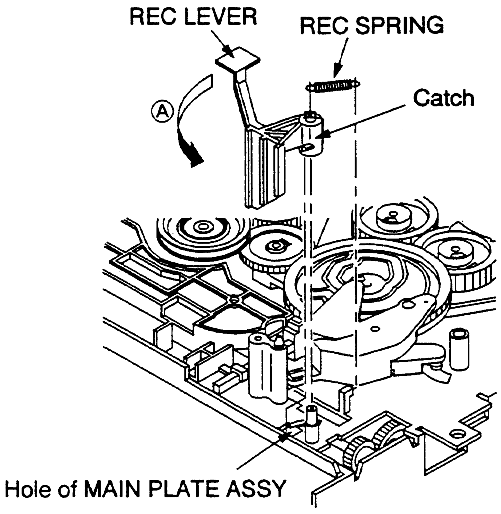

REC LEVER
REC SPRING
Catch
Ⓐ
Hole of MAIN PLATE ASSY

Fig. 2-14

2-15. REEL BELT, BELT PULLEY, SHIFT SPRING

SET POSITION : Upside down

(Removal)

1. Remove the REEL BELT shown in Fig. 2-15.
2. Remove the CUT WASHER (ⓐ) fastening the BELT PULLEY shown in Fig. 2-15, and remove the BELT PULLEY.
3. Remove the SHIFT SPRING shown in Fig. 2-15.

(Installation)

1. Install the SHIFT SPRING shown in Fig. 2-15.
2. Fasten the BELT PULLEY shown in Fig. 2-15.
3. Install the CUT WASHER (ⓐ) shown in Fig. 2-15 to fasten the BELT PULLEY.
4. Install the REEL BELT shown in Fig. 2-15.

Note : Do not get GREASE or OIL on the REAL BELT during installation.

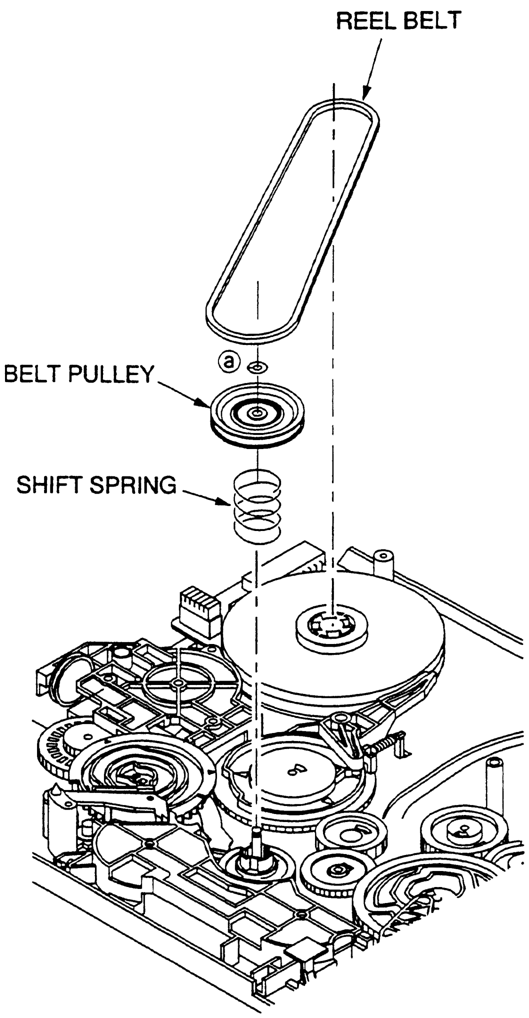


Fig. 2-15

2-16. CAPSTAN BRAKE SPRING, CAPSTAN BRAKE

SET POSITION : Upside down

To access CAPSTAN BRAKE SPRING and CAPSTAN BRAKE, remove the REEL BELT. (Para. 2-15)

(Removal)

1. Remove the CAPSTAN BRAKE SPRING shown in Fig. 2-16.
2. Remove the CUT WASHER (ⓐ) fastening the CAPSTAN BRAKE shown in Fig. 2-16.
3. Use tweezers to unfasten Catch (ⓑ) on the surface of the CAPSTAN BRAKE shown in Fig. 2-16, and remove the CAPSTAN BRAKE.

(Installation)

1. Install the CAPSTAN BRAKE shown in Fig. 2-16.

Note : Do not get GREASE or OIL on the area specified in Fig. 2-16 during installation of the CAPSTAN BRAKE.

2. Install the CUT WASHER (ⓐ) shown in Fig. 2-16 to fasten the CAPSTAN BRAKE.
3. Install the CAPSTAN BRAKE SPRING shown in Fig. 2-16.

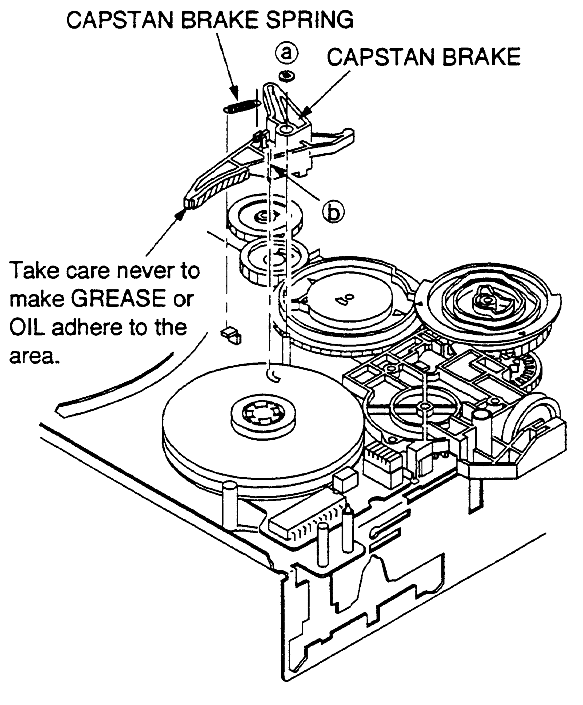

CAPSTAN BRAKE SPRING
ⓐ
CAPSTAN BRAKE
ⓑ
Take care never to make GREASE or OIL adhere to the area.

Fig. 2-16

2-17. MODE HOLDER, REEL LOCK LEVER, MODE GEAR, F/L DRIVE GEAR, F/L DRIVE LEVER, WORM PULLEY UNIT, LOADING WORM GEAR

SET POSITION : Upside down

(Removal)

1. Use tweezers to unfasten Catch (ⓐ) on the surface of the REEL LOCK LEVER shown in Fig. 2-17-1, and remove the REEL LOCK LEVER.
2. Remove the MODE HOLDER fastening screw (ⓑ) shown in Fig. 2-17-1, and remove the MODE HOLDER.
3. Use tweezers to unfasten Catch (ⓒ) of the SNAP PIN shown in Fig. 2-17-1, and remove the SNAP PIN.
4. Use tweezers to Unfasten Catch (ⓓ) on the surface of the MODE GEAR, shown in Fig. 2-17-1, and remove the MODE GEAR.
5. Remove the F/L DRIVE GEAR, shown in Fig. 2-17-1, from the shaft of the MAIN PLATE ASSY.
6. Remove the F/L DRIVE LEVER shown in Fig. 2-17-1.

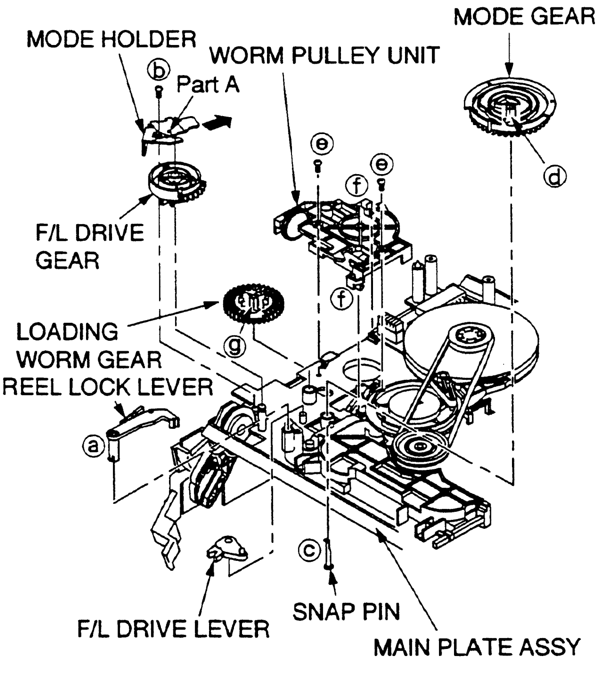

MODE GEAR
MODE HOLDER
WORM PULLEY UNIT
ⓑ
Part A
ⓔ
ⓔ
ⓕ
ⓓ
F/L DRIVE GEAR
ⓕ
LOADING WORM GEAR
ⓖ
REEL LOCK LEVER
ⓐ
ⓒ
SNAP PIN
F/L DRIVE LEVER
MAIN PLATE ASSY

Fig. 2-17-1

7. Remove the two WORM PULLEY UNIT fastening screws (ⓔ) shown in Fig. 2-17-1.
8. Remove the LOADING BELT. (Refer to Para. 2-11 for the removal method.)
9. Unfasten the two Catches (ⓕ) of the WORM PULLEY UNIT shown in Fig. 2-17-1 to remove the WORM PULLEY UNIT.
10. Unfasten the Catch (ⓖ) on the surface of the LOADING WORM GEAR, shown in Fig. 2-17-1, and remove the LOADING WORM GEAR.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-17-2 on the new LOADING WORM GEAR.
2. Install the LOADING WORM GEAR shown in Fig. 2-17-1.
3. Turn the WORM PULLEY shown in Fig. 2-17-3 so that the Round Hole on PINCH WORM GEAR matches with that on WORM HOLDER.
4. Install the WORM PULLEY UNIT so that the Δ mark on the LOADING WORM GEAR, shown in Fig. 2-17-4, matches with the Part A.
5. Fasten the LOADING BELT. (Refer to Para. 2-11.)
6. Install the F/L DRIVE LEVER shown in Fig. 2-17-1.

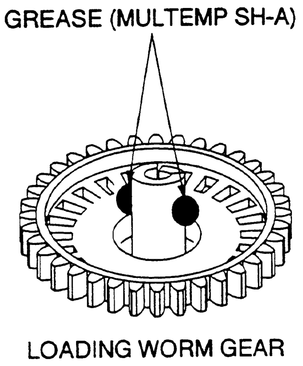

GREASE (MULTEMP SH-A)
LOADING WORM GEAR

Fig. 2-17-2

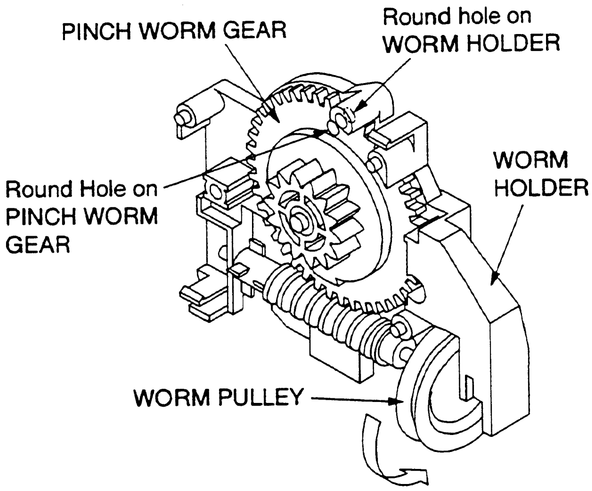

PINCH WORM GEAR
Round hole on WORM HOLDER
WORM HOLDER
Round Hole on PINCH WORM GEAR
WORM PULLEY

Fig. 2-17-3

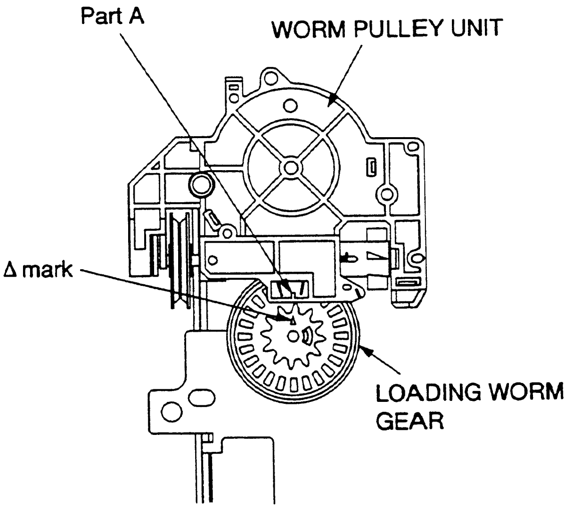

Part A
WORM PULLEY UNIT
Δ mark
LOADING WORM GEAR

Fig. 2-17-4

7. Fully move the F/L DRIVE LEVER shown in Fig. 2-17-5, in the direction shown by arrow Ⓐ.
8. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-17-6 on the new F/L DRIVE GEAR.
9. Move the F/L ARM UNIT (TU) shown in Fig. 2-17-7, in the direction shown by arrow Ⓐ.

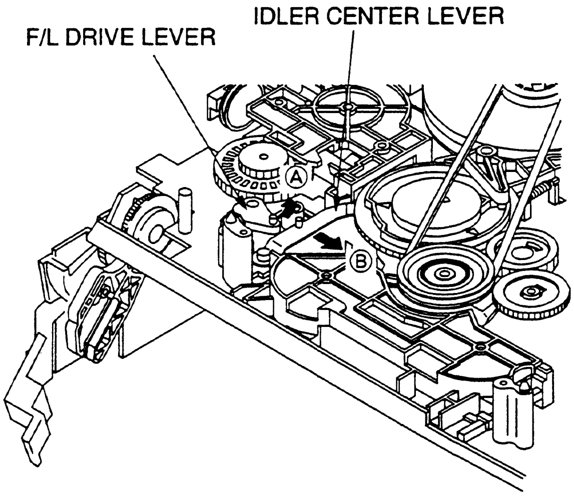
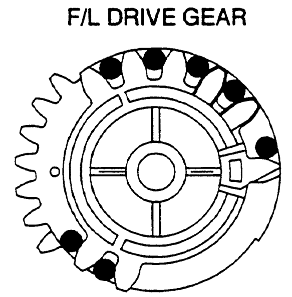

IDLER CENTER LEVER
F/L DRIVE LEVER
Ⓐ
Ⓑ

Fig. 2-17-5


F/L DRIVE GEAR

Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-17-6

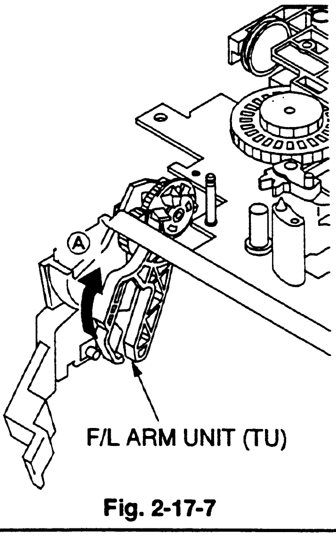

Ⓐ
F/L ARM UNIT (TU)

Fig. 2-17-7

10. Install the F/L DRIVE GEAR so that the first tooth of the gear of the F/L ARM UNIT (TU) matches with the II mark on the F/L DRIVE GEAR, as shown in Fig. 2-17-8.
11. Fully move the IDLER CENTER LEVER, shown in Fig. 2-17-5, in the direction shown by arrow Ⓑ.
12. Apply GREASE (MULTEMP SH-A) [859D055080] to the area shown in Fig. 2-17-9 on the new MODE GEAR.
13. Install the MODE GEAR shown in Fig. 2-17-10 so that ;
    - Δ mark on the Part A of the MODE GEAR matches with Δ mark on the Part B of the CAM GEAR (TU).
    - Δ mark on the Part C of the MODE GEAR points to the centre of the LOADING WORM GEAR.
    - Δ mark on the Part D of the MODE GEAR matches with the ○ mark on the Part E of the F/L DRIVE GEAR.
14. Make sure that the Δ mark on the PINCH WORM GEAR, shown in Fig. 2-12-3, matches with the Δ mark on the PINCH CAM GEAR .
15. Push the SNAP PIN, shown in Fig. 2-17-1, into the centre hole of the MODE GEAR.
16. Move the MODE HOLDER shown in Fig. 2-17-1, in the direction shown by arrow so that the Part A is fixed to the shaft of the MAIN PLATE ASSY and install it.

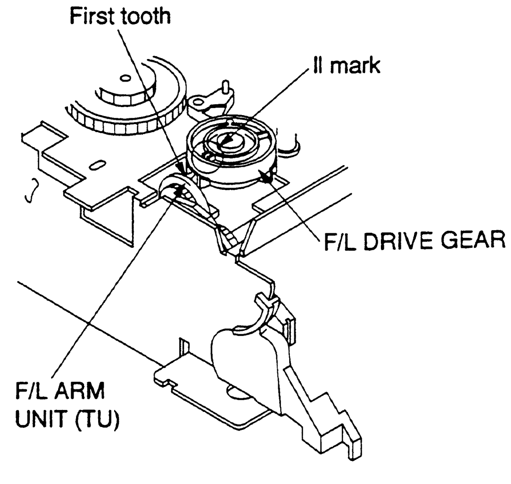
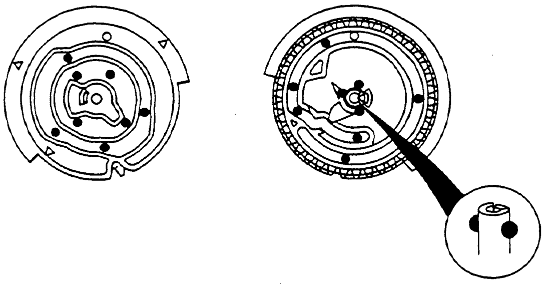

First tooth
II mark
F/L DRIVE GEAR
F/L ARM UNIT (TU)

Fig. 2-17-8



Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-17-9

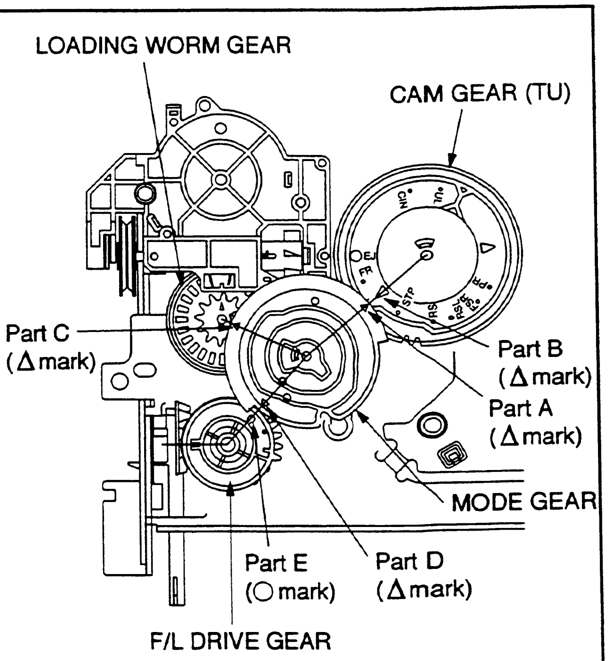

LOADING WORM GEAR
CAM GEAR (TU)
Part C
(Δ mark)
Part B
(Δ mark)
Part A
(Δ mark)
MODE GEAR
Part E
(○ mark)
Part D
(Δ mark)
F/L DRIVE GEAR

Fig. 2-17-10

17. Install the REEL LOCK LEVER so that the pins on the Parts F and G of the REEL LOCK LEVER, shown in Fig. 2-17-11, enter the Cam Groove of the MODE GEAR.

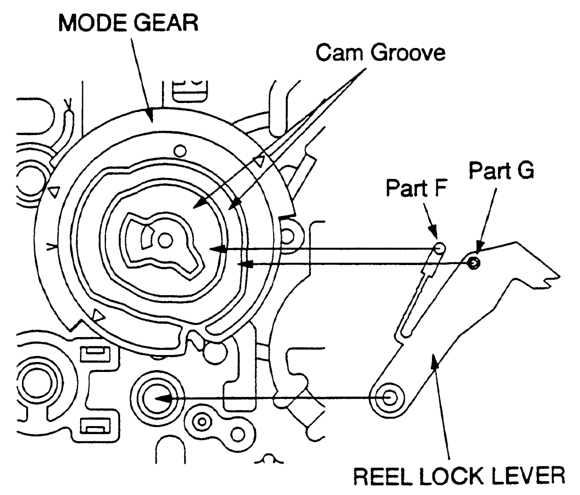

MODE GEAR
Cam Groove
Part F
Part G
REEL LOCK LEVER

Fig. 2-17-11

2-18. CONTROL WIND LEVER, TENSION LEVER UNIT

SET POSITION : Upside down

(Removal)

1. Use tweezers to unfasten Catch (ⓐ) on the surface of the CONTROL WIND LEVER, shown in Fig. 2-18-1, and remove the CONTROL WIND LEVER.
2. Remove the TENSION LEVER UNIT shown in Fig. 2-18-1.

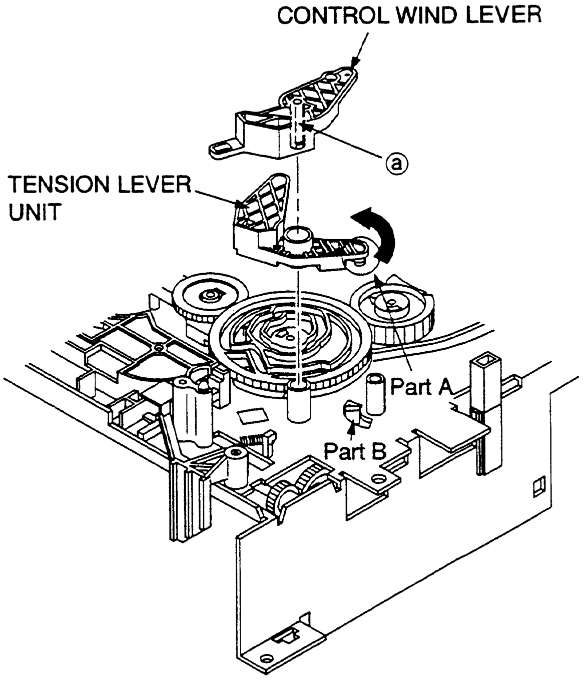
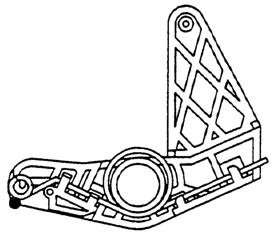

CONTROL WIND LEVER
ⓐ
TENSION LEVER UNIT
Part A
Part B

Fig. 2-18-1

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-18-2 on the new TENSION LEVER UNIT.
2. Install the TENSION LEVER UNIT shown in Fig. 2-18-1, by the following, procedure :
   - Make sure the pin on the Part A of the TENSION LEVER UNIT, shown in Fig. 2-18-3 enters the Cam Groove on the CAM GEAR (SP).
   - Move the Part A of the spring of the TENSION LEVER UNIT, shown in Fig. 2-18-1 in the direction shown by arrow. Install the TENSION LEVER UNIT so that the Part A of the spring is hooked to the Part B of the TENSION ARM.
3. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-18-4 on the new CONTROL WIND LEVER.
4. Install the CONTROL WIND LEVER so that the pin on the Part B on the CONTROL WIND LEVER shown in Fig. 2-18-3, enters the Cam Groove on the CAM GEAR (SP), and that the pin of the Part D of the WIND LEVER UNIT enters the Hole of the Part C on the CONTROL WIND LEVER.



Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-18-2

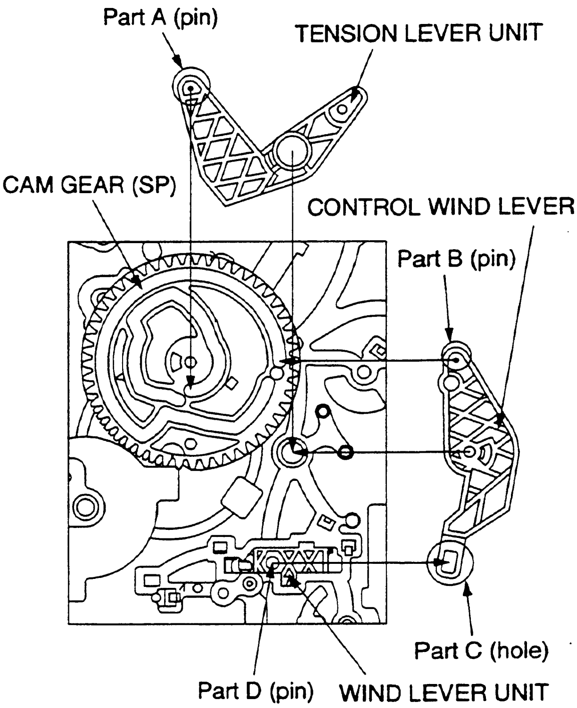
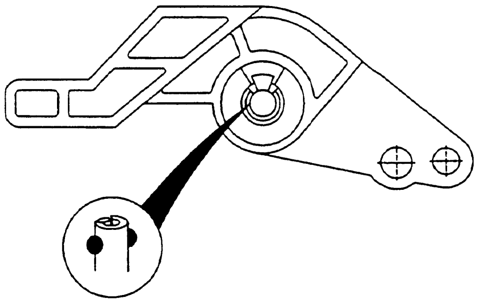


Fig. 2-18-3



Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-18-4

2-19. PHOTO GUIDE UNIT (SP), PHOTO GUIDE UNIT (TU)

SET POSITION : Upside down

To access PHOTO GUIDE UNIT(SP) and PHOTO GUIDE UNIT(TU), remove the following parts :

- LOADING BELT (Para. 2-11)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- WORM PULLEY UNIT (Para. 2-17)

(Removal)

1. Use tweezers to unfasten Catch (ⓐ) of the PHOTO GUIDE UNIT (SP), shown in Fig. 2-19-1, and remove the PHOTO GUIDE UNIT (SP) in the direction shown by arrow.
2. Remove the PHOTO GUIDE UNIT (TU), shown in Fig. 2-19-2, in the direction shown by arrow.

(Installation)

1. Push the PHOTO GUIDE UNIT (TU) into the DECK to the bottom, with the Part A shown in Fig. 2-19-2 toward the inside of DECK.

Note : Do not touch the transparent part A of the PHOTO GUIDE UNIT (TU).

2. Push the PHOTO GUIDE UNIT (SP) into the DECK so that the Catch (ⓐ) is hooked, with the Part A shown in Fig. 2-19-1 toward the inside of DECK.

Note : Do not touch the transparent part A of the PHOTO GUIDE UNIT(SP).

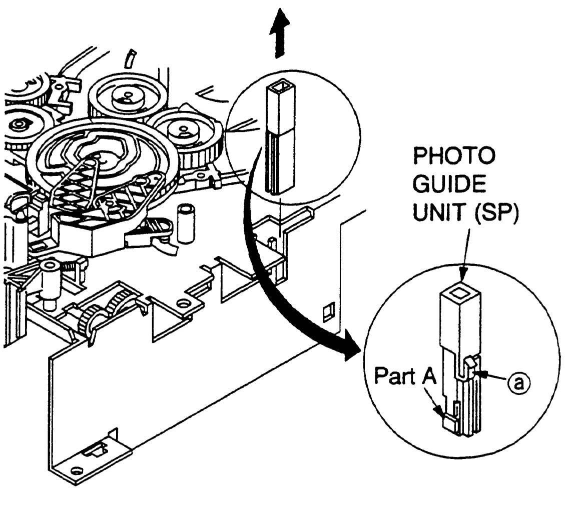


Fig. 2-19-1

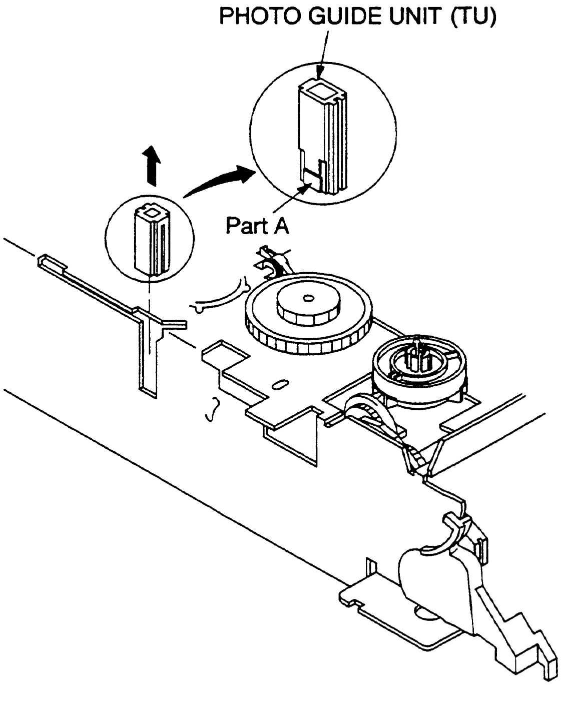


Fig. 2-19-2

2-20. LOADING GEAR, LAMP LOADING GEAR

SET POSITION : Upside down

To access LOADING GEAR and LAMP LOADING GEAR, remove the following parts :

- LAMP GUIDE (Para. 2-7)
- REEL BELT (Para. 2-15)

(Removal)

1. Use tweezers to unfasten Catch (ⓐ) on the surface of the LOADING GEAR, shown in Fig. 2-20-1, and remove the LOADING GEAR.
2. Use tweezers to unfasten Catch (ⓑ) on the surface of the LAMP LOADING GEAR, shown in Fig. 2-20-1, and remove the LAMP LOADING GEAR.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-20-2 on the new LAMP LOADING GEAR .
2. Install the LAMP LOADING GEAR shown in Fig. 2-20-1.
3. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-20-2 on the new LOADING GEAR .
4. Install the LOADING GEAR shown in Fig. 2-20-1.

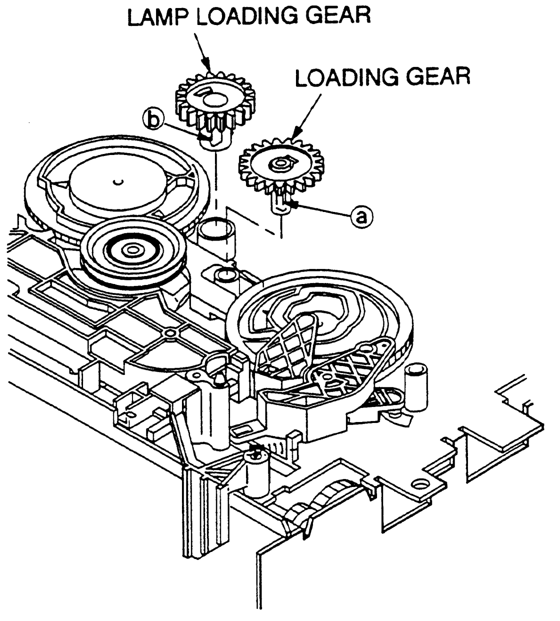


Fig. 2-20-1

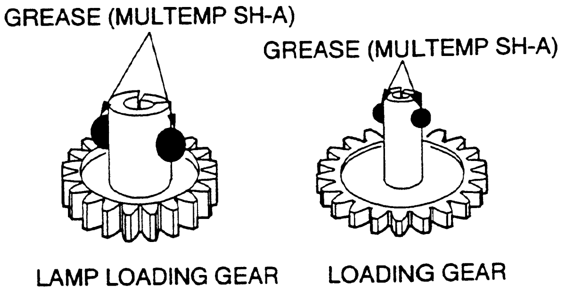


Fig. 2-20-2

2-21. CAM GEAR (TU)

SET POSITION : Upside down

To access the CAM GEAR(TU), remove the following parts.

- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)

(Removal)

1. Use tweezers to unfasten the Catch (ⓐ) on the surface of the CAM GEAR (TU), shown in Fig. 2-21-1, and remove the CAM GEAR (TU).

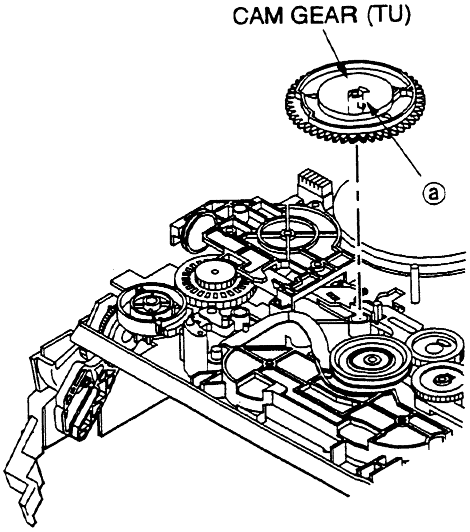
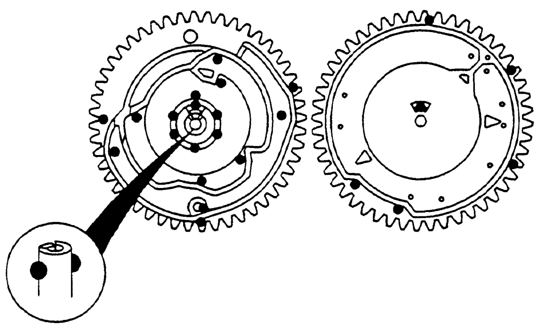


Fig. 2-21-1

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-21-2 on the new CAM GEAR (TU).
2. Set the CAM GEAR (SP), shown in Fig. 2-21-3, so that the Δ mark on the Part A of it points to the centre of the LOADING GEAR.
3. Install the CAM GEAR (TU), shown in Fig. 2-21-3, so that the Δ mark on the Part B of it points to the centre of the LAMP LOADING GEAR.



Apply GREASE (MULTEMP SH-A) to the area ● .

Fig. 2-21-2

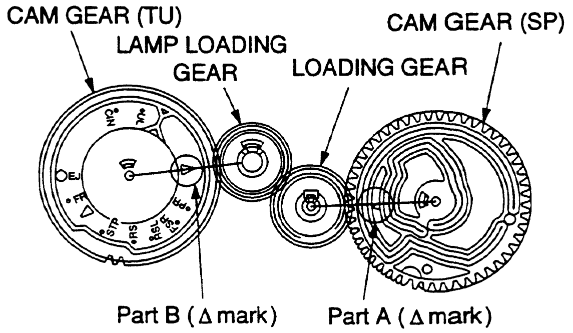

CAM GEAR (TU)
LAMP LOADING GEAR
CAM GEAR (SP)
LOADING GEAR
Part B (Δ mark)
Part A (Δ mark)

Fig. 2-21-3

2-22. PHOTO UNIT, REEL GEAR UNIT (TU), REEL GEAR UNIT (SP)

SET POSITION : Upside down

(Removal)

1. Move the REC LEVER, shown in Fig. 2-14-1, in the direction shown by arrow Ⓐ. Unfasten Catches (ⓐ) of the PHOTO UNIT, and Catches (ⓑ) of the MAIN PLATE ASSY, shown in Fig. 2-22-1, to remove the PHOTO UNIT.
2. Remove the REEL GEAR UNIT (TU) shown in Fig. 2-22-1.
3. Remove the REEL GEAR UNIT (SP) shown in Fig. 2-22-1.

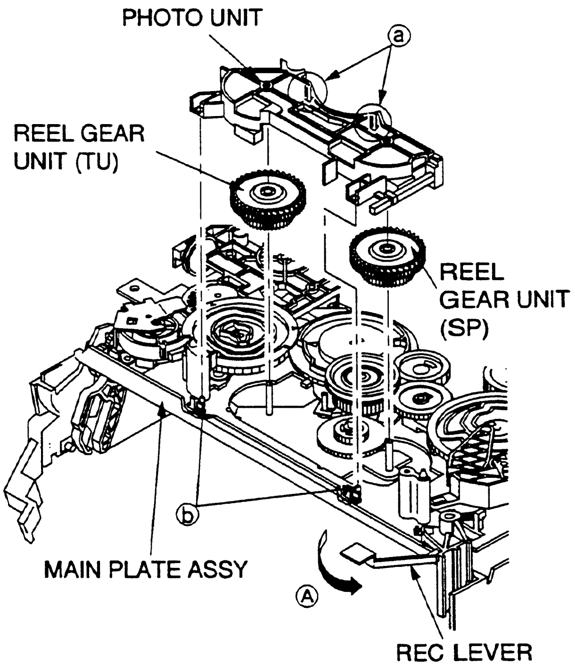


PHOTO UNIT
ⓐ
REEL GEAR UNIT (TU)
REEL GEAR UNIT (SP)
ⓑ
MAIN PLATE ASSY
Ⓐ
REC LEVER

Fig. 2-22-1

(Installation)

1. Apply OIL (FLOIL 948P) [859D154020] to the shaft on the MAIN PLATE ASSY, shown in Fig.2-22-2.
2. Install the REEL GEAR UNIT (SP) shown in Fig. 2-22-2.

Note : Make sure the colour of the spring is correct, refer to the table in Fig. 2-22-2, when installing the REEL GEAR UNIT (SP).

3. Apply OIL (FLOIL 948P) [859D154020] to the shaft on the MAIN PLATE ASSY, refer to Fig.2-22-2.
4. Install the REEL GEAR UNIT (TU) shown in Fig. 2-22-1.

Note : Make sure the colour of the spring is correct. Refer to the table in Fig. 2-22-2, when installing the REEL GEAR UNIT(TU).

5. Apply a small quantity of OIL (FLOIL 948P) [859D154020] to the area specified in Fig. 2-22-3 on the new PHOTO UNIT.
6. Install the PHOTO UNIT shown in Fig. 2-22-1.

Part Name	Colour of Spring
REEL GEAR UNIT (SP)	Gold
REEL GEAR UNIT (TU)	Silver

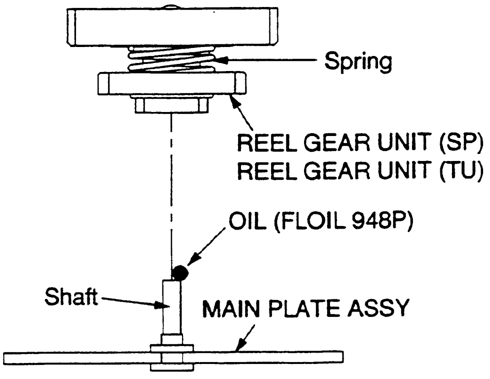

Spring
REEL GEAR UNIT (SP)
REEL GEAR UNIT (TU)
OIL (FLOIL 948P)
Shaft
MAIN PLATE ASSY

Fig. 2-22-2

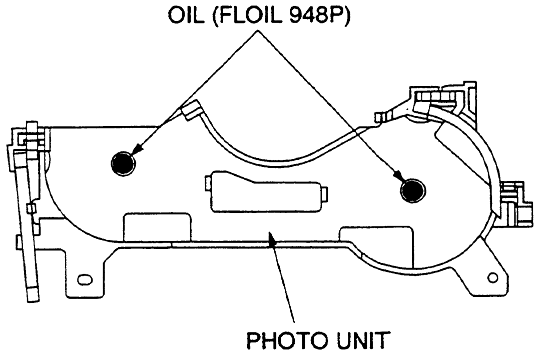

OIL (FLOIL 948P)
PHOTO UNIT

Fig. 2-22-3

2-23. IDLER CENTER LEVER

SET POSITION : Upside down

To access IDLER CENTER LEVER, remove the following Parts :

- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- CAM GEAR (TU) (Para. 2-21)
- PHOTO UNIT (Para. 2-22)

(Removal)

1. Remove the IDLER CENTER LEVER shown in Fig. 2-23-1.

(Installation)

1. Insert the Part A of the IDLER CENTER LEVER, shown in Fig. 2-23-2 into the Part B of the IDLER UNIT, when installing the IDLER CENTER LEVER.

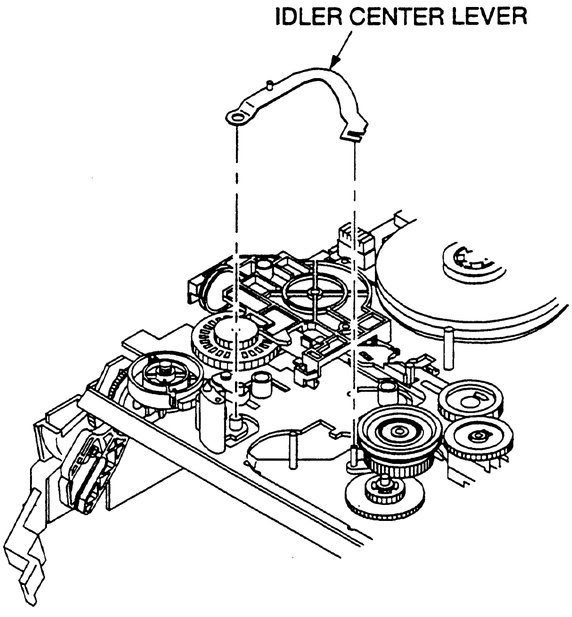

IDLER CENTER LEVER

Fig. 2-23-1

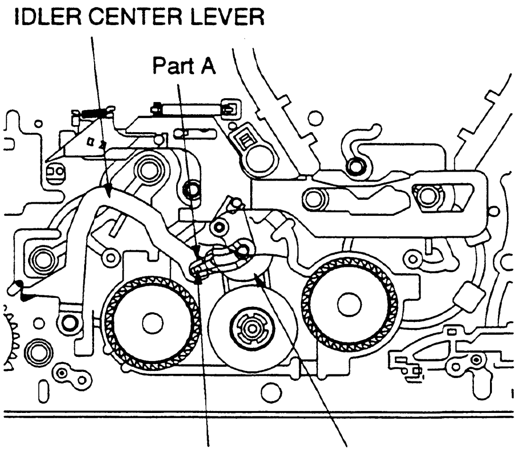

IDLER CENTER LEVER
Part A
Part B
IDLER UNIT

Fig. 2-23-2

2-24. PULLEY GEAR, IDLER UNIT

SET POSITION : Upside down

To access the PULLEY GEAR and IDLER UNIT, remove following parts :

- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- CAM GEAR (TU) (Para. 2-21)
- PHOTO UNIT (Para. 2-22)
- IDLER CENTER LEVER (Para. 2-23)

(Removal)

1. Remove the PULLEY GEAR shown in Fig. 2-24.
2. Remove the IDLER UNIT shown in Fig. 2-24.

(Installation)

1. Apply OIL (FLOIL 948P) [859D154020] to the shaft for the IDLER UNIT, shown in Fig.2-24.
2. Apply OIL (FLOIL 948P) [859D154020] to the area specified in Fig. 2-24 on the new IDLER UNIT.
3. Install the IDLER UNIT shown in Fig. 2-24.
4. Install the PULLEY GEAR shown in Fig. 2-24.

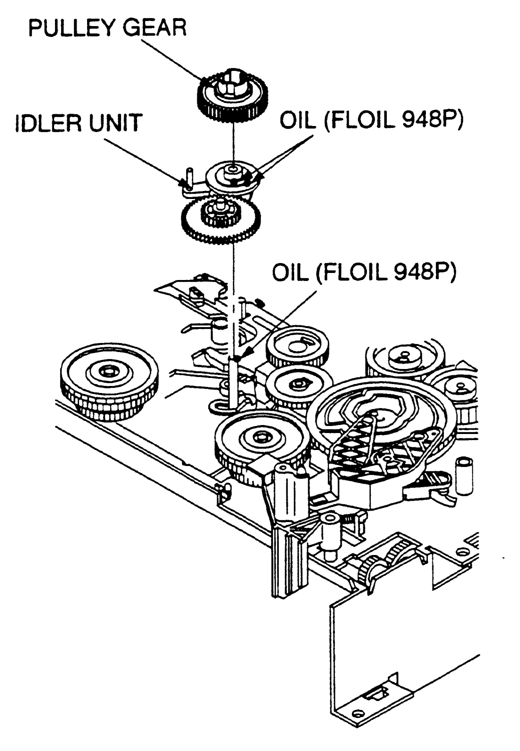


Fig. 2-24

2-25. F/L ARM UNIT (SP)

SET POSITION : Normal

To access the F/L ARM UNIT(SP), remove the following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)

(Removal)

1. Move the F/L ARM UNIT (SP) fully in the direction shown by arrow Ⓐ, as shown in Fig. 2-25-1.
2. Unfasten the Catch (ⓐ) of the F/L ARM UNIT (SP), shown in Fig. 2-25-1, to remove the F/L ARM UNIT (SP).

(Installation)

1. Move the F/L ARM UNIT (TU) fully in the direction shown by arrow Ⓐ, as shown in Fig. 2-26-1.
2. Install the F/L ARM UNIT (SP) so that the gear of the F/L ARM UNIT (SP) and that of the SYNC GEAR ASSY are engaged as shown in Fig. 2-25-2.

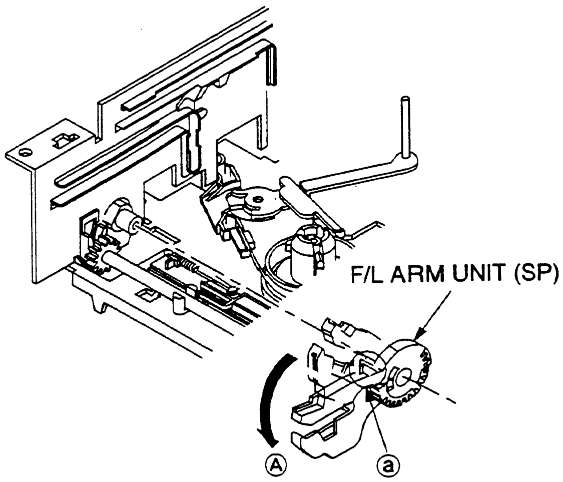


Fig. 2-25-1

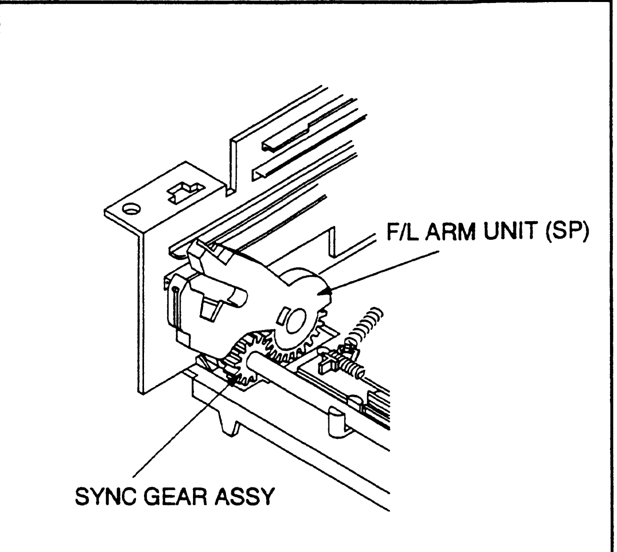


Fig. 2-25-2

2-26. F/L ARM UNIT (TU)

SET POSITION : Normal

To access the F/L ARM UNIT(TU), remove following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)
- LOADING BELT (Para. 2-11)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- F/L DRIVE GEAR (Para. 2-17)
- F/L DRIVE LEVER (Para. 2-17)

(Removal)

1. Move the F/L ARM UNIT (TU) fully in the direction shown by arrow Ⓐ, as shown in Fig. 2-26-1.
2. Unfasten the Catch (ⓐ) of the F/L ARM UNIT (TU), shown in Fig. 2-26-1, to remove the F/L ARM UNIT (TU).

(Installation)

1. Move the F/L ARM UNIT (SP), shown in Fig. 2-25-1, fully in the direction shown by arrow Ⓐ.
2. Install the F/L ARM UNIT (TU) in the position shown in Fig. 2-26-2.

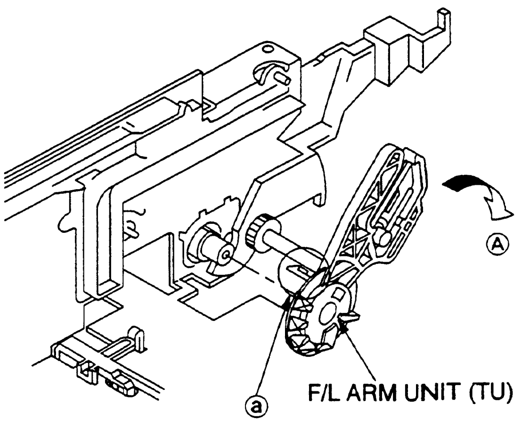
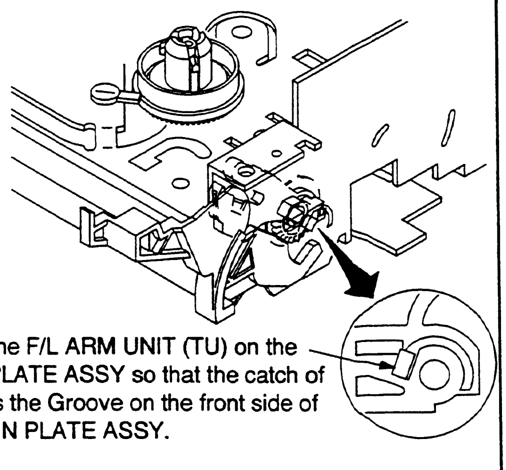


Fig. 2-26-1



Install the F/L ARM UNIT (TU) on the MAIN PLATE ASSY so that the catch of it enters the Groove on the front side of the MAIN PLATE ASSY.

Fig. 2-26-2

2-27. SYNC GEAR ASSY

SET POSITION : Normal

To access SYNC GEAR ASSY, remove the following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)
- LOADING BELT (Para. 2-11)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- F/L DRIVE GEAR (Para. 2-17)
- F/L ARM UNIT (SP) (Para. 2-25)
- F/L ARM UNIT (TU) (Para. 2-26)

(Removal)

1. Unfasten the Catch (ⓐ) of the MAIN PLATE ASSY as shown in Fig. 2-27-1. Move the SYNC GEAR ASSY in the direction shown by arrow Ⓐ to remove it.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-27-2 on the MAIN PLATE ASSY.
2. Move the SYNC GEAR ASSY, shown in Fig. 2-27-1, in the opposite direction against arrow Ⓐ to install it.

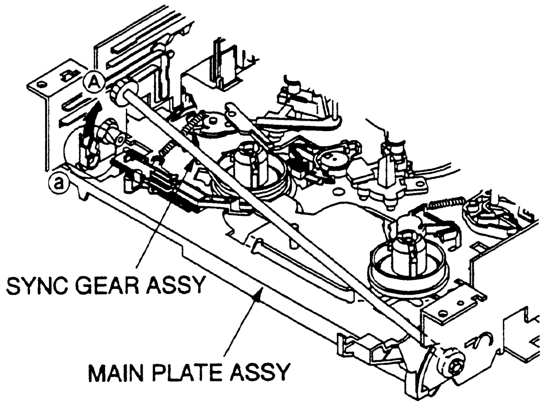

Ⓐ
ⓐ
SYNC GEAR ASSY
MAIN PLATE ASSY

Fig. 2-27-1

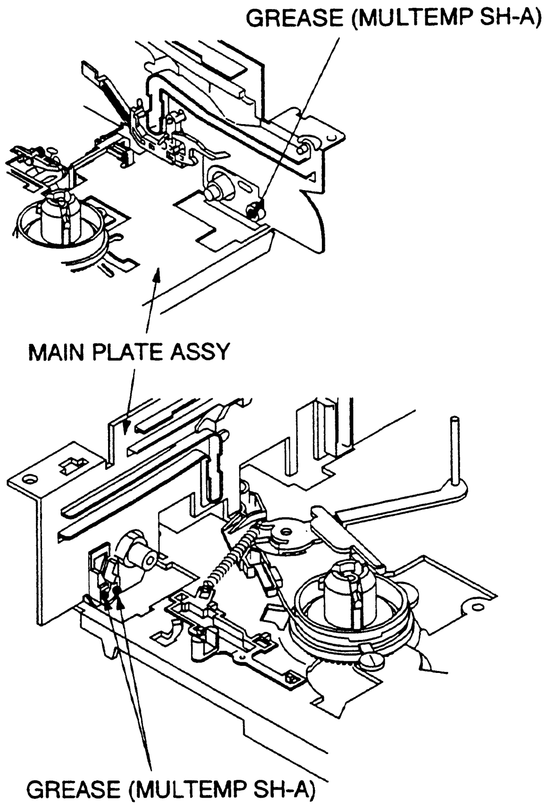

GREASE (MULTEMP SH-A)
MAIN PLATE ASSY
GREASE (MULTEMP SH-A)

Fig. 2-27-2

2-28. F/L DOOR ARM

SET POSITION : Normal

To access the F/L DOOR ARM, remove the following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)
- LOADING BELT (Para. 2-11)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- F/L DRIVE GEAR (Para. 2-17)
- F/L ARM UNIT (SP) (Para. 2-25)
- F/L ARM UNIT (TU) (Para. 2-26)
- SYNC GEAR ASSY (Para. 2-27)

(Removal)

1. Remove the F/L DOOR ARM shown in Fig. 2-28.

(Installation)

1. Install the F/L DOOR ARM shown in Fig. 2-28.

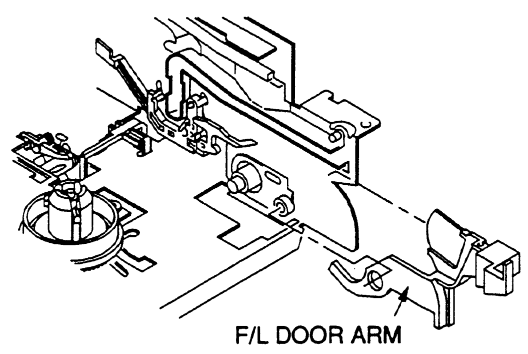


Fig. 2-28

2-29. WIND LEVER UNIT

SET POSITION : Normal

To access the WIND LEVER UNIT, remove the following parts :

- STAY PLATE (Para. 2-2)
- BOTTOM UNIT (Para. 2-3)
- CONTROL WIND LEVER (Para. 2-18)

(Removal)

1. To remove, move the WIND LEVER UNIT in the direction of arrow, as shown in Fig. 2-29-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-29-2 on the MAIN PLATE ASSY.
2. Set the WIND LEVER UNIT so that each of three notches (ⓐ) matches with the corresponding Catches (ⓑ) on the MAIN PLATE ASSY, as shown in Fig. 2-29-1. Move the WIND LEVER UNIT in the opposite direction shown by arrow to install it.

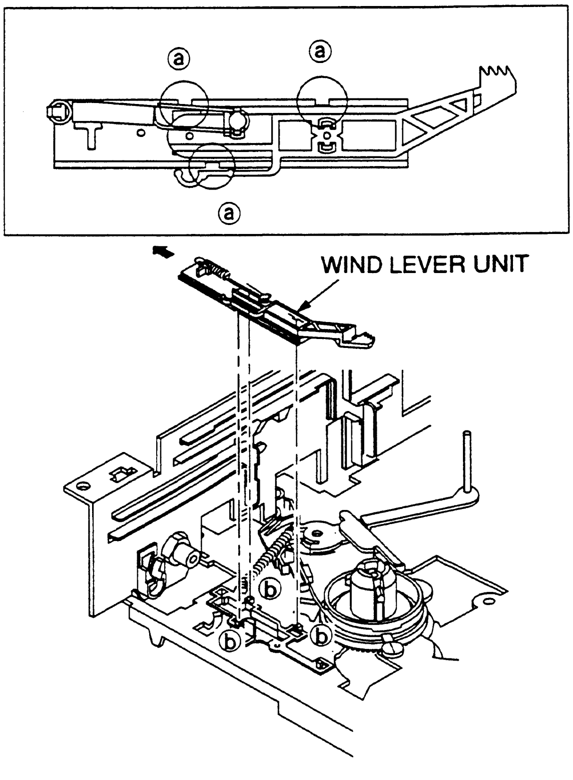
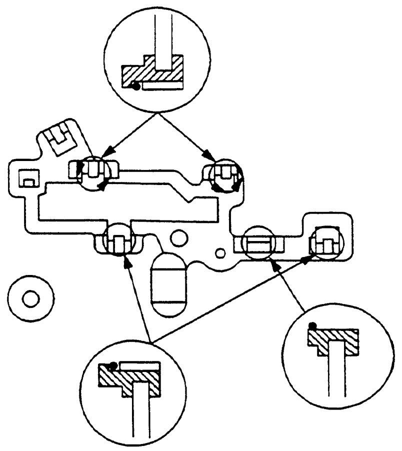


Fig. 2-29-1



Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-29-2

2-30. LOADING LOCK SPRING, LOADING LOCK LEVER

SET POSITION : Normal

To access the LOADING LOCK SPRING and LOADING LOCK LEVER, remove the following parts :

- MODE POSITION GUIDE (Para. 2-7)
- LOADING BELT (Para. 2-11)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- WORM PULLEY UNIT (Para. 2-17)

(Removal)

1. Remove the Part A of the LOADING LOCK SPRING, shown in Fig. 2-30-1, through the Hole of the MAIN PLATE ASSY.
2. Move the LOADING LOCK LEVER in the direction shown by arrow Ⓐ while pushing the Part B of it to remove the LOADING LOCK LEVER, and LOADING LOCK SPRING, as shown in Fig. 2-30-1.

(Installation)

1. Attach the LOADING LOCK SPRING shown in Fig. 2-30-2 to the LOADING LOCK LEVER.
2. Move the Part A of the LOADING LOCK SPRING, shown in Fig. 2-30-2, in the direction shown by arrow Ⓑ. Hook the Part A of the LOADING LOCK SPRING on the Catch of the Part B of the LOADING LOCK LEVER.
3. Install the LOADING LOCK LEVER with the LOADING LOCK SPRING attached, shown in Fig. 2-30-1, on the MAIN PLATE ASSY.
4. Insert the Part A of the LOADING LOCK SPRING, shown in Fig. 2-30-1, into the Hole of the LOADING LOCK SPRING.

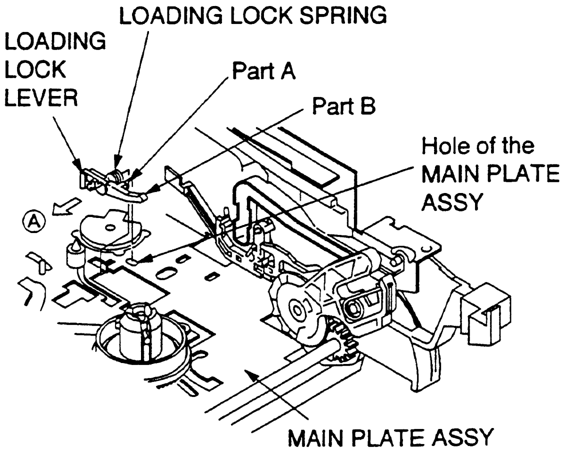

LOADING LOCK SPRING
LOADING LOCK LEVER
Part A
Part B
Hole of the MAIN PLATE ASSY
Ⓐ
MAIN PLATE ASSY

Fig. 2-30-1

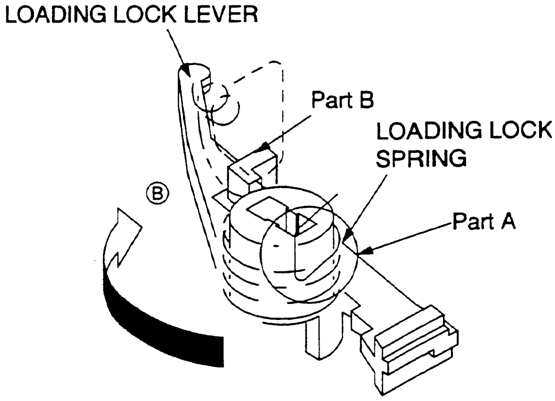

LOADING LOCK LEVER
Part B
LOADING LOCK SPRING
Ⓑ
Part A

Fig. 2-30-2

2-31. CAPSTAN MOTOR

SET POSITION : Normal

To access the CAPSTAN MOTOR, remove the REEL BELT (Para. 2-15) :

(Removal)

1. Remove the three CAPSTAN MOTOR fastening screws (ⓐ) shown in Fig. 2-31-1, and remove the CAPSTAN MOTOR.

(Installation)

1. Set the CAPSTAN MOTOR in the position shown in Fig. 2-31-2 to install it.

Note : Do not damage the shaft of the CAPSTAN MOTOR during installation.

2. Install three screws (ⓐ) shown in Fig. 2-31-1.

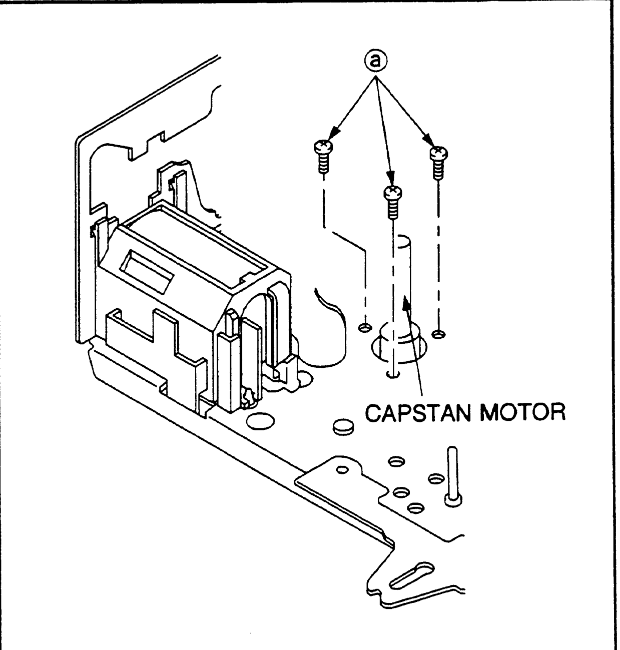


Fig. 2-31-1

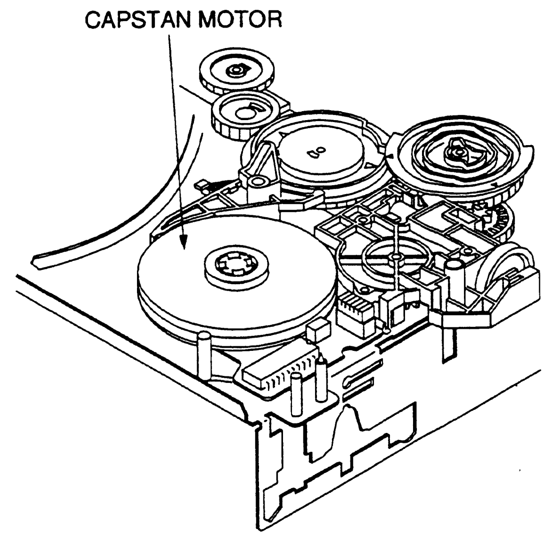


Fig. 2-31-2

2-32. CAM GEAR (SP)

SET POSITION : Upside down

To access the CAM GEAR(SP), remove the following parts :

- CONTROL WIND LEVER (Para. 2-18)
- TENSION LEVER UNIT (Para. 2-18)
- LOADING GEAR (Para. 2-20)

(Removal)

1. Use tweezers to unfasten Catch (ⓐ) on the surface of the CAM GEAR (SP), shown in Fig. 2-32-1, and remove the CAM GEAR (SP).

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-32-2 on the new CAM GEAR (SP).
2. Set the CAM GEAR (TU), shown in Fig. 2-32-3 so that the Δ mark on the Part B points to the centre of the LAMP LOADING GEAR.
3. Set the CAM GEAR (SP), shown in Fig. 2-32-3 so that the Δ mark on the Part A points to the centre of the boss for the LOADING GEAR.

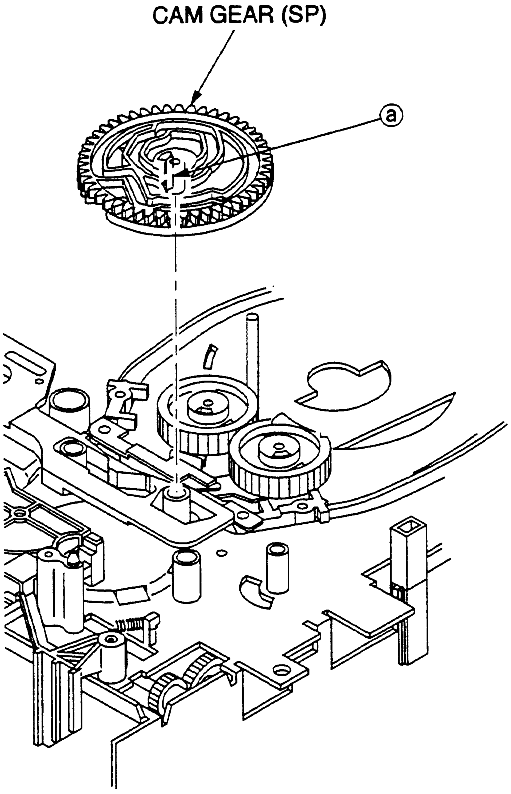
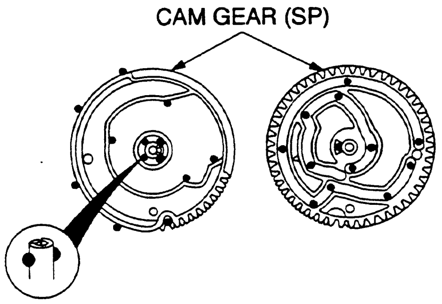


Fig. 2-32-1



Apply GREASE (MULTEMP SH-A) to the area ● .

Fig. 2-32-2

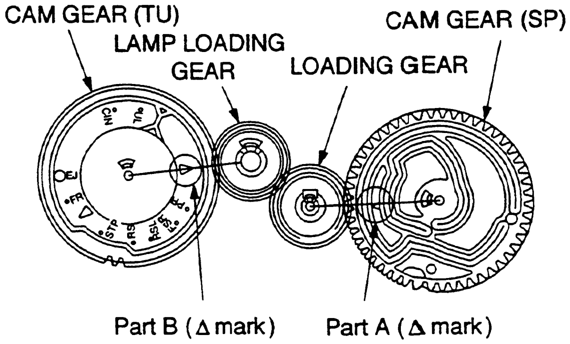

CAM GEAR (TU)
LAMP LOADING GEAR
LOADING GEAR
CAM GEAR (SP)
Part B (Δ mark)
Part A (Δ mark)

Fig. 2-32-3

2-33. LOADING ARM UNIT (TU), LOADING ARM UNIT (SP)

SET POSITION : Upside down

To access the LOADING ARM UNIT(TU) and LOADING ARM UNIT(SP), remove the following parts :

- CONTROL WIND LEVER (Para. 2-18)
- TENSION LEVER UNIT (Para. 2-18)
- LOADING GEAR (Para. 2-20)
- CAM GEAR (SP) (Para. 2-32)

(Removal)

1. Remove the two MAIN PLATE SUPPORT fastening screws (ⓐ), shown in Fig. 2-33-1, and remove the MAIN PLATE SUPPORT.
2. Move the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU), shown in Fig. 2-33-1, to the fully loading position.
3. Use tweezers to unfasten Catch (ⓑ) on the surface of the LOADING ARM UNIT (TU) shown in Fig. 2-33-1 and remove the LOADING ARM UNIT (TU).
4. Use tweezers to unfasten Catch (ⓒ) on the surface of the LOADING ARM UNIT (SP), shown in Fig. 2-33-1, and remove the LOADING ARM UNIT (SP).

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-33-2 on the new LOADING ARM UNIT (SP).
2. Install the LOADING ARM UNIT (SP) shown in Fig. 2-33-1.
3. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-33-2 on the new LOADING ARM UNIT (TU).

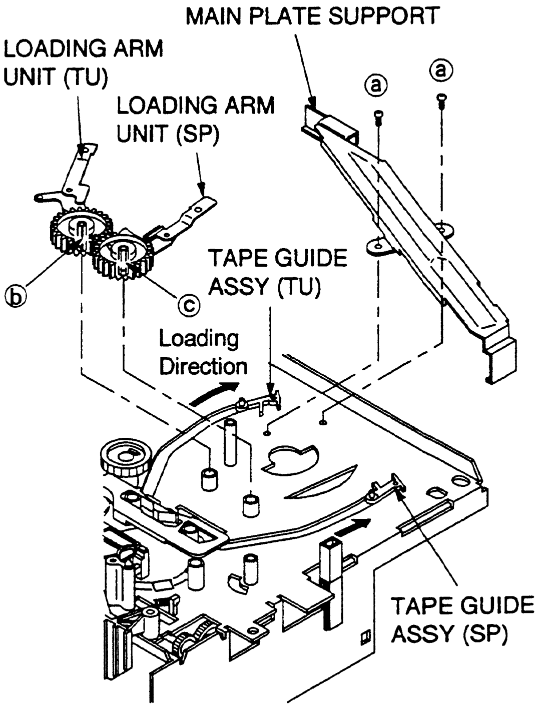
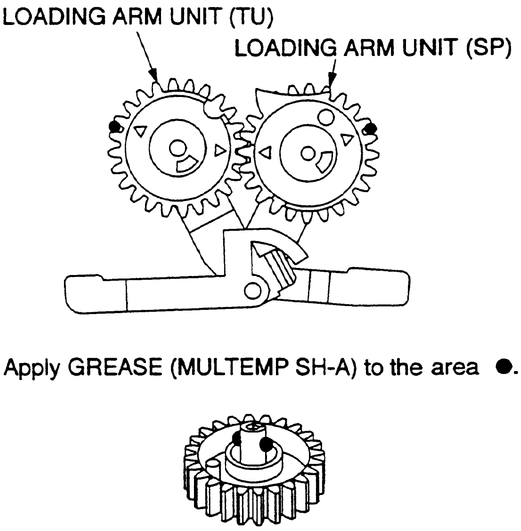

MAIN PLATE SUPPORT
LOADING ARM UNIT (TU)
LOADING ARM UNIT (SP)
ⓐ
ⓐ
ⓑ
ⓒ
TAPE GUIDE ASSY (TU)
Loading Direction
TAPE GUIDE ASSY (SP)

Fig. 2-33-1


LOADING ARM UNIT (TU)
LOADING ARM UNIT (SP)

Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-33-2

4. Set the LOADING ARM UNIT (TU) shown in Fig. 2-33-3 so that the Δ mark of it matches with the Δ mark of the LOADING ARM UNIT (SP) and install it.
5. Move the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU), shown in Fig. 2-33-1 fully to the unloading position.
6. Install the MAIN PLATE SUPPORT shown Fig. 2-33-1.

2-34. CAM SPRING (C), CAM PLATE UNIT (C)

SET POSITION : Upside down

To access the CAM SPRING(C) and CAM PLATE UNIT(C), remove the following parts :

- LAMP GUIDE (Para. 2-7)
- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- WORM PULLEY UNIT (Para. 2-17)
- CONTROL WIND LEVER (Para. 2-18)
- TENSION LEVER UNIT (Para. 2-18)
- LOADING GEAR (Para. 2-20)
- LAMP LOADING GEAR (Para. 2-20)
- CAM GEAR (TU) (Para. 2-21)
- CAM GEAR (SP) (Para. 2-32)

(Removal)

1. Move the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU), shown in Fig. 2-33-1, to the fully loaded position.
2. Remove the CAM SPRING (C) shown in Fig. 2-34-1.
3. Move the CAM PLATE UNIT (C) in the direction shown by arrow Ⓐ and remove it, as shown in Fig. 2-34-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-34-2 on the new CAM PLATE UNIT (C).

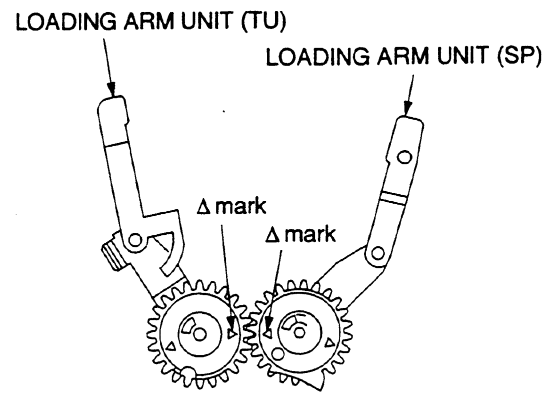


Fig. 2-33-3

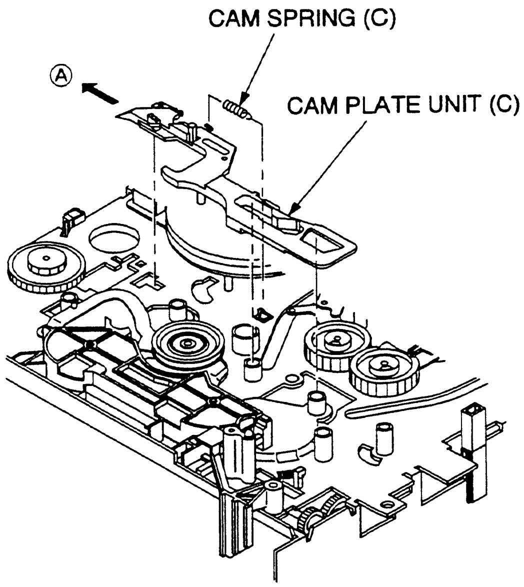
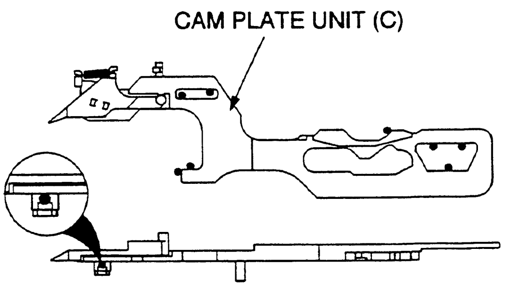


Fig. 2-34-1



Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-34-2

2. Install the CAM PLATE UNIT (C), shown in Fig. 2-34-3, so that the pin (ⓐ) of it enters the Part A of the SHIFT LEVER.
3. Install the CAM SPRING (C) shown in Fig. 2-34-1.
4. Move the TENSION ARM, shown in Fig. 2-34-4 fully in the direction shown by arrow. Move the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU), shown in Fig. 2-33-1 to the fully unloaded position.

2-35. TAPE GUIDE ASSY (SP), TAPE GUIDE ASSY (TU)

SET POSITION : Upside down

To access the TAPE GUIDE ASSY (SP), remove the following parts :

- LAMP GUIDE (Para. 2-7)
- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- WORM PULLEY UNIT (Para. 2-17)
- CONTROL WIND LEVER (Para. 2-18)
- TENSION LEVER UNIT (Para. 2-18)
- LOADING GEAR (Para. 2-20)
- LAMP LOADING GEAR (Para. 2-20)
- CAM GEAR (TU) (Para. 2-21)
- CAM GEAR (SP) (Para. 2-32)
- LOADING ARM UNIT (TU) (Para. 2-33)
- LOADING ARM UNIT (SP) (Para. 2-33)
- CAM SPRING (C) (Para. 2-33)
- CAM PLATE UNIT (C) (Para. 2-34)

(Removal)

1. Move the TAPE GUIDE ASSY (SP), shown in Fig. 2-35-1, to the fully unloading position to remove it.
2. Move the TAPE GUIDE ASSY (TU), shown in Fig. 2-35-1, to the fully unloaded position to remove it.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area specified in Fig. 2-35-2 on the MAIN PLATE ASSY .
2. Install the TAPE GUIDE ASSY (TU) shown in Fig. 2-35-1.
3. Install the TAPE GUIDE ASSY (SP) shown in Fig. 2-35-1.
4. Perform interchangeabilty adjustment, item 3-2-1 (GUIDE ROLLER Adjustment) to item 3-2-5 (Adjustment of FM waveform Flatness).

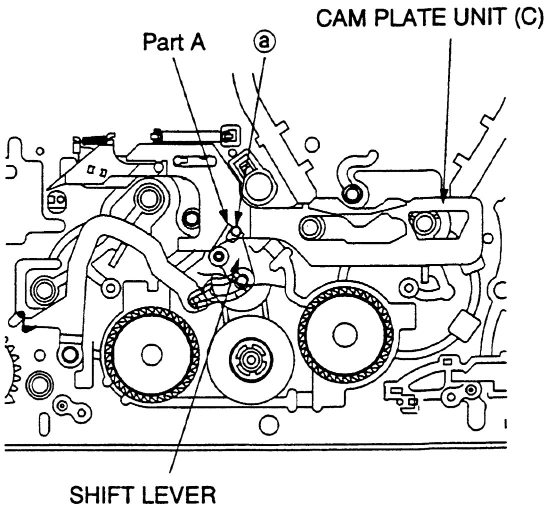


Fig. 2-34-3

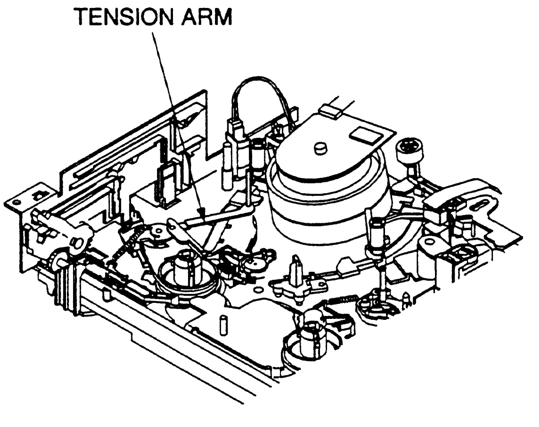


Fig. 2-34-4

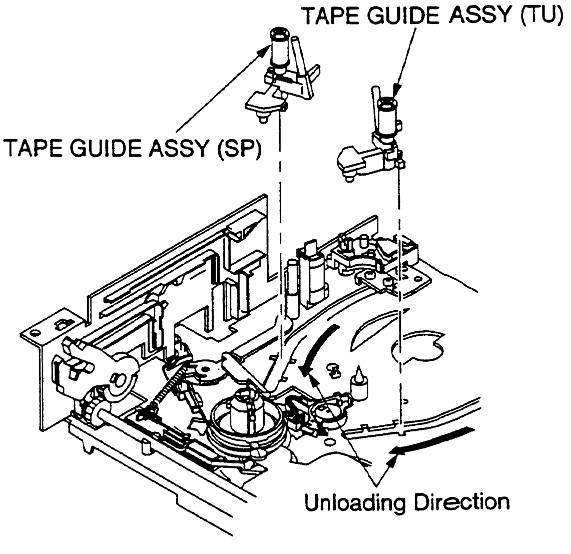
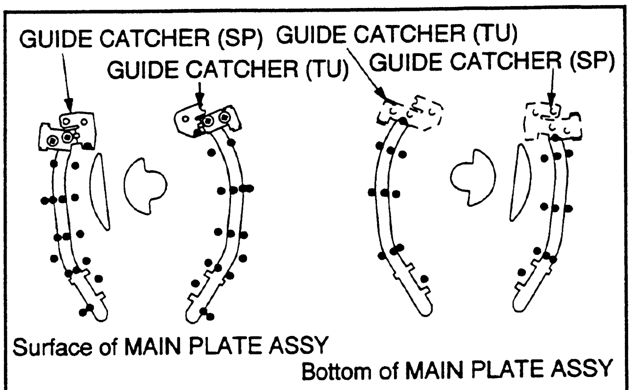


Fig. 2-35-1


GUIDE CATCHER (SP)
GUIDE CATCHER (TU)
GUIDE CATCHER (TU)
GUIDE CATCHER (SP)
Surface of MAIN PLATE ASSY
Bottom of MAIN PLATE ASSY

Apply GREASE (MULTEMP SH-A) to the area ●.

Fig. 2-35-2

2-36. GUIDE ROLLER (SP), GUIDE ROLLER (TU)

(Removal)

1. Loosen the GUIDE ROLLER (SP) set screw (ⓐ) with an L SHAPED BOX DRIVER (859C433070) so that the GUIDE ROLLER (SP), shown in Fig. 2-36-1. Rotates freely.
2. Use the height adjustment screw driver to turn the GUIDE ROLLER (SP) height adjustment screw (ⓑ) counter-clockwise, and remove the GUIDE ROLLER (SP), refer to Fig. 2-36-1.
3. Loosen the GUIDE ROLLER (TU) set screw (ⓒ) with an L SHAPED BOX DRIVER (859C443070) so that the GUIDE ROLLER (TU) shown in Fig. 2-36-1. Rotates freely.
4. Turn the height adjustment screw (ⓓ), at the top of the GUIDE ROLLER (TU), counter-clockwise with a height Adjustment Driver to remove the GUIDE ROLLER (TU), refer to Fig. 2-36-1.

(Installation)

1. Insert the GUIDE ROLLER (TU) shown in Fig. 2-36-1 into the installation hole on the TAPE GUIDE ASSY (TU).
2. Turn the height adjustment screw (ⓓ) clockwise shown in Fig. 2-36-2, so that the GUIDE ROLLER (TU) is at a height of 25.2 mm above the Reference Plane.
3. Lightly tighted the GUIDE ROLLER (TU) set screw (ⓒ), shown in Fig. 2-36-1.
4. Insert the GUIDE ROLLER (SP), shown in Fig. 2-36-1, into the installation hole on the TAPE GUIDE ASSY (SP).
5. Turn the height adjustment screw (ⓑ) at the top of the GUIDE ROLLER (SP), clockwise shown in Fig. 2-36-2, so that the GUIDE ROLLER (SP) is at a height of 25.1 mm above the Reference Plane.

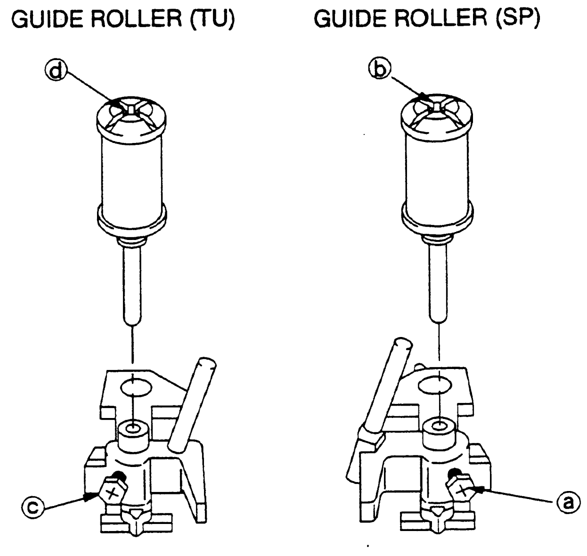

GUIDE ROLLER (TU)
GUIDE ROLLER (SP)
ⓓ
ⓑ
ⓒ
ⓐ

Fig. 2-36-1

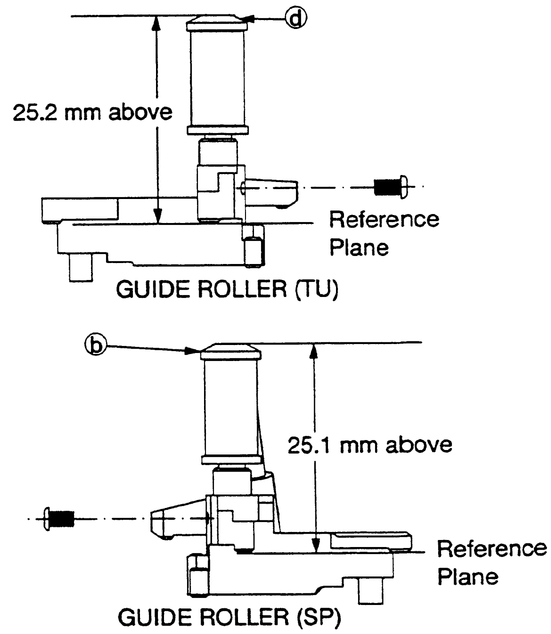

ⓓ
25.2 mm above
Reference Plane
GUIDE ROLLER (TU)
ⓑ
25.1 mm above
Reference Plane
GUIDE ROLLER (SP)

Fig. 2-36-2

6. Lightly tighted the GUIDE ROLLER (SP) set screw (ⓐ) shown in Fig. 2-36-1.
7. Perform "Check and Adjustment of the FM Envelope" in Para. 3-2 of "Interchangeability Adjustment of the Mechanism".
8. Clean the GUIDE ROLLER (SP) and GUIDE ROLLER (TU) with Dry Gauze.

2-37. DRUM CLAMPER, DRUM ASSY

(Removal)

1. Disconnect the Card Lead Wire of the DRUM ASSY shown in Fig. 2-37-1.
2. Remove the two DRUM CLAMPER fastening screws (ⓐ and ⓑ), shown in Fig. 2-37-1, to remove the DRUM ASSY with the DRUM CLAMPER attached.
3. Move the DRUM CLAMPER in the direction shown by arrow to remove it from the DRUM ASSY, as shown in Fig. 2-37-2.
4. If the product is provided with the SHIM, shown in Fig. 2-37-1, remove and scrap it.

(Installation)

Note : When replacing the DRUM ASSY, do not install the shim.

1. Attach the DRUM CLAMPER shown in Fig. 2-37-2 to the DRUM ASSY.
2. Install the DRUM ASSY with the DRUM CLAMPER attached, shown in Fig. 2-37-1, on the MAIN PLATE ASSY.

Note : when installing the DRUM CLAMPER shown in Fig. 2-37-1, first install the screw (ⓑ) and then install the screw (ⓐ).

3. Connect the Card Lead Wire of the DRUM ASSY shown in Fig. 2-37-1.
4. Perform the "Playback Switching Point" adjustment described in ELECTRICAL ADJUSTMENT.
5. Perform "Interchangeability Adjustment of the Mechanism".
6. Clean the DRUM ASSY, shown in Fig. 2-37-1, with alcohol.

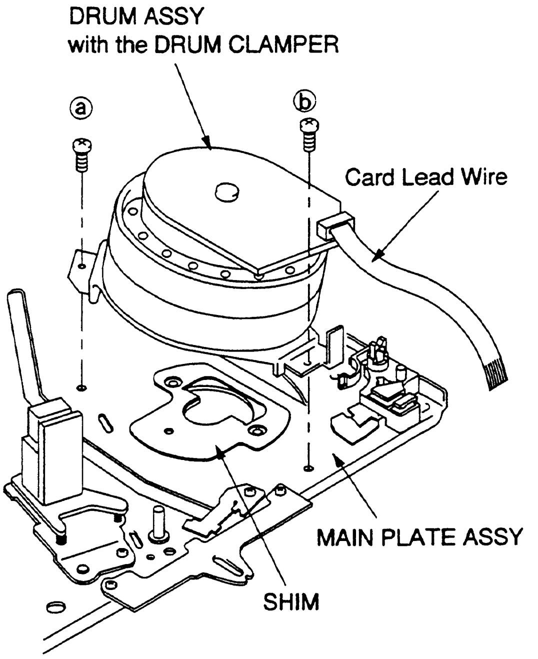

DRUM ASSY
with the DRUM CLAMPER
ⓐ
ⓑ
Card Lead Wire
MAIN PLATE ASSY
SHIM

Fig. 2-37-1

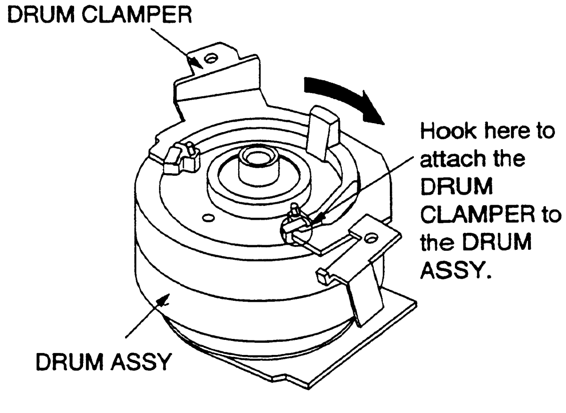

DRUM CLAMPER
Hook here to attach the DRUM CLAMPER to the DRUM ASSY.
DRUM ASSY

Fig. 2-37-2

2-38. DRUM MOTOR STATOR, BRUSH SPRING, ROTOR CASE, END RING, BRUSH, UPPER DRUM ASSY, SPACER

SET POSITION : Normal.

(Removal)

1. Disconnect the Card Lead Wire of the DRUM ASSY shown in Fig. 2-38-1.
2. Remove the two DRUM MOTOR STATOR fastening screws (ⓐ), shown in Fig. 2-38-1, to remove the DRUM MOTOR STATOR.
3. Remove the two ROTOR CASE fastening screws (ⓑ), shown in Fig. 2-38-1, and remove the ROTOR CASE.
4. Loosen the END RING fastening screw (ⓒ) [hexagon screw] shown in Fig. 2-38-1, and remove the END RING.
5. Remove the BRUSH SPRING shown in Fig. 2-38-1.
6. Remove the BRUSH shown in Fig. 2-38-1.
7. Remove the UPPER DRUM ASSY shown in Fig. 2-38-1.
8. Remove the SPACER shown Fig. 2-38-1.

(Installation)

1. Install the SPACER shown in Fig. 2-38-1.

   Note : Do not use any other SPACER than the one enclosed with the new UPPER DRUM ASSY for replacement.
2. Install the UPPER DRUM ASSY shown in Fig. 2-38-1.
3. Install the END RING shown in Fig. 2-38-1 so that the reference Hole (Ⓐ) of the END RING is located in parallel with the rear line of the MAIN PLATE ASSY shown in Fig. 2-38-2.
   (Install the reference Hole (Ⓐ) to the right of the rear MAIN PLATE ASSY.)
4. Apply screw sealing agent to the END RING fastening screw (ⓒ) [hexagon screw] shown in Fig. 2-38-1.

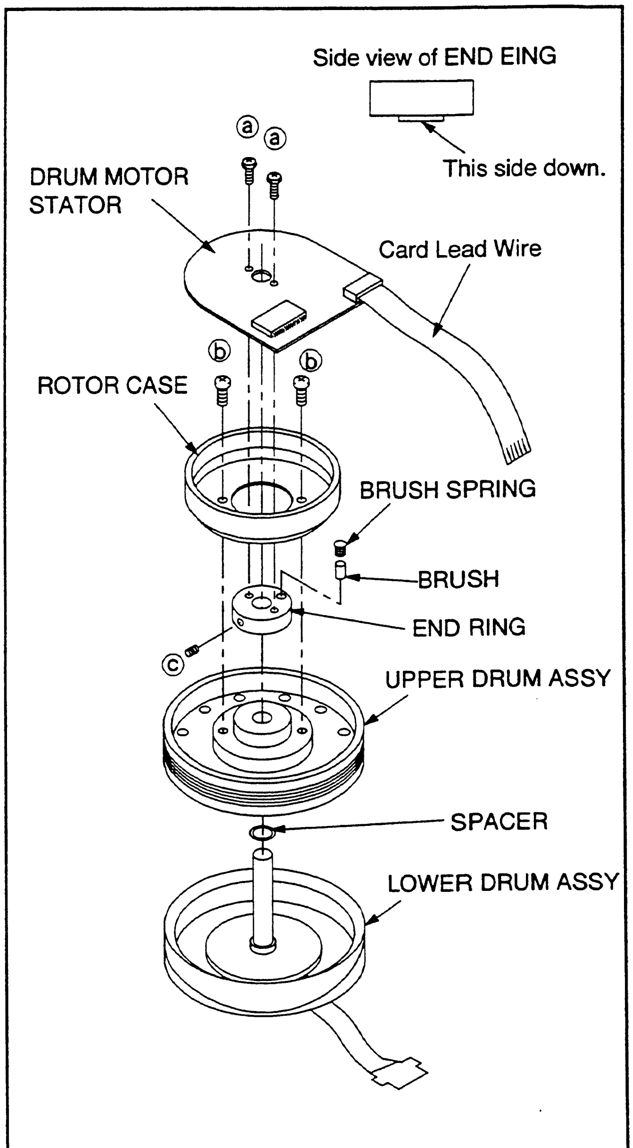

Side view of END EING
This side down.
ⓐ
ⓐ
DRUM MOTOR STATOR
Card Lead Wire
ⓑ
ⓑ
ROTOR CASE
BRUSH SPRING
BRUSH
END RING
ⓒ
UPPER DRUM ASSY
SPACER
LOWER DRUM ASSY

Fig. 2-38-1

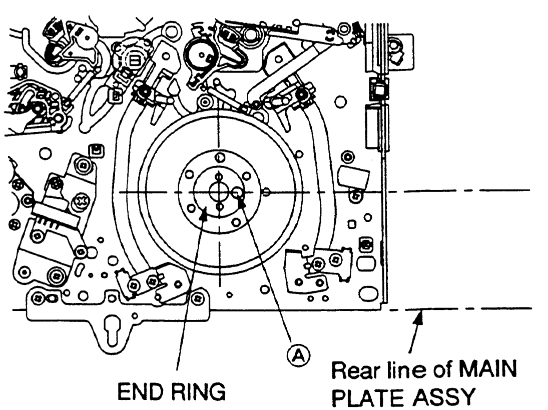

Ⓐ
END RING
Rear line of MAIN PLATE ASSY

Fig. 2-38-2

5. Install the ROTOR CASE shown in Fig. 2-38-1 so that the reference Holes (Ⓐ) match each other at three points between the ROTOR CASE shown in Fig. 2-38-3 and the UPPER DRUM ASSY.
6. Install the BRUSH shown in Fig. 2-38-1.
7. Install the BRUSH SPRING shown in Fig. 2-38-1.
8. Install the DRUM MOTOR STATOR shown in Fig. 2-38-1.
9. Connect the Card Lead Wire of the DRUM ASSY shown in Fig. 2-38-1.
10. Perform the "Playback Switching Point" adjustment described in ELECTRICAL ADJUSTMENT.
11. Perform "Interchangeability Adjustment of the Mechanism".
12. Clean the DRUM ASSY with alcohol.

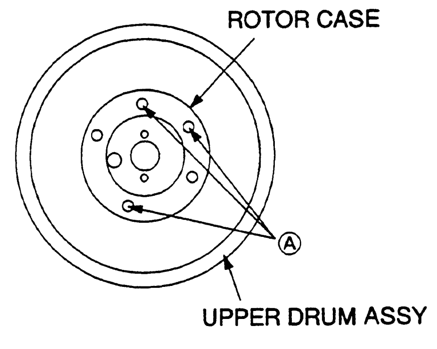


Fig. 2-38-3

2-39. SHIFT LEVER

SET POSITION : Normal

To access the SHIFT LEVER , remove the following parts :

- LAMP GUIDE (Para. 2-7)
- LOADING BELT (Para. 2-11)
- REEL BELT (Para. 2-15)
- CAPSTAN BRAKE SPRING (Para. 2-16)
- CAPSTAN BRAKE (Para. 2-16)
- BELT PULLEY (Para. 2-15)
- SHIFT SPRING (Para. 2-15)
- MODE HOLDER (Para. 2-17)
- REEL LOCK LEVER (Para. 2-17)
- MODE GEAR (Para. 2-17)
- WORM PULLEY UNIT (Para. 2-17)
- CONTROL WIND LEVER (Para. 2-18)
- TENSION LEVER UNIT (Para. 2-18)
- LOADING GEAR (Para. 2-20)
- LAMP LOADING GEAR (Para. 2-20)
- CAM GEAR (TU) (Para. 2-21)
- PHOTO UNIT (Para. 2-22)
- IDLER CENTER LEVER (Para. 2-23)
- PULLEY GEAR (Para. 2-24)
- IDLER UNIT (Para. 2-24)
- CAM GEAR (SP) (Para. 2-32)
- CAM SPRING (C) (Para. 2-34)
- CAM PLATE UNIT (C) (Para. 2-34)

(Removal)

1. Remove the SHIFT LEVER shown in Fig. 2-39-1.

(Installation)

1. Apply GREASE (MULTEMP SH-A) [859D055080] to the area of the new SHIFT LEVER shown in Fig. 2-39-2.
2. Install the SHIFT LEVER shown in Fig. 2-39-1.

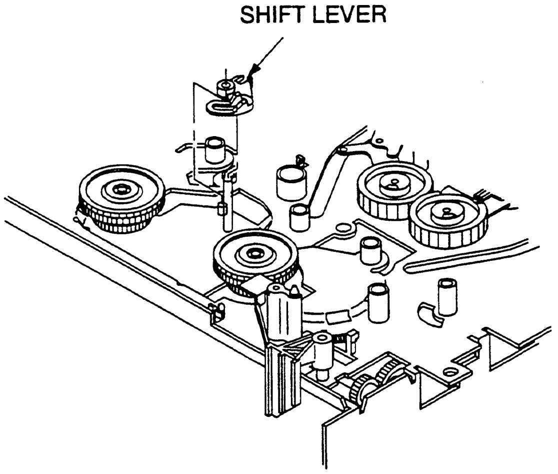


Fig. 2-39-1

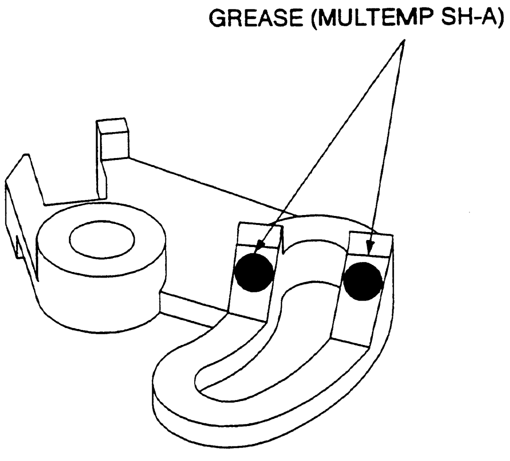


Fig. 2-39-2

3. Interchangeability Adjustment of the Mechanism

Note 1 : Tracking may need to be preset during interchangeability adjustment of the mechanism. Digital tracking is preset by short circuiting TP5A and TP5B on the PCB-MAIN.

Note 2 : The adjustments are performed in the play back mode, using the staircase signal of an Alignment Tape. Connect an oscilloscope to TP2A and external Trigger from TP2H, unless otherwise specified.

3-1. Adjustment of BACK TENSION and TENSION PIN Position

Run a Blank Tape for several minutes to break in the REEL DISKs and the transport before making the adjustment.

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Make sure that the TENSION PIN is in the position shown in Fig. 3-1.
3. If the TENSION PIN is not in the position specified in Fig. 3-1, turn the boss to set the TENSION PIN to be in position.
4. Insert the Back Tension MEASURING JIG (859C345080) and set the VCR to the play back mode.
5. Make sure that the reading of the BACK TENSION MEASURING JIG is within 50 ± 6 g/cm.

Note : Before the measurement, make sure that the Tape travel has become steady.
If the reading exceeds the specified value, replace the TENSION SPRING.

6. While Tape travel is steady, check visually to make sure that the vibration range of the TENSION PIN is 1 mm or less.
   If the vibration range exceeds the specified value, replace the REEL DISK.

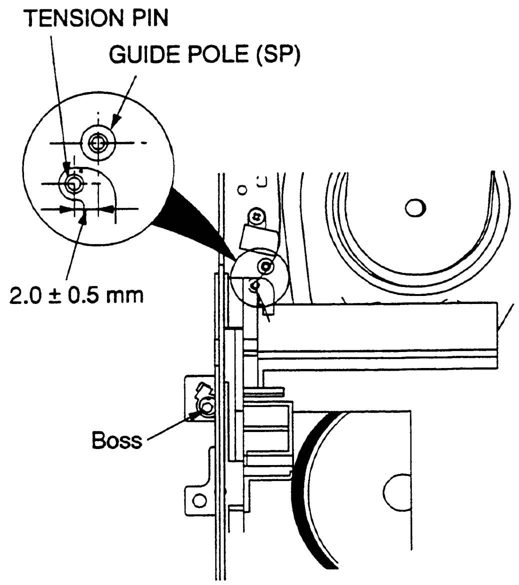


Fig. 3-1

3-2. Check and Adjustment of the FM Envelope

3-2-1. GUIDE ROLLER Adjustment

The Guide Rollers are secured by a hexagon screw, however, this screw, does not require to be loosened for adjustments to be made.

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Preset tracking.
3. Make sure that the FM waveform is flat like (A).
4. Perform "Adjustment of GUIDE ROLLER (SP) Height" in Item 3-2-2 if the leading portion (the entry side of the DRUM) of the FM waveform is like (B) or (C). Perform "Adjustment of GUIDE ROLLER (TU) Height" in Item 3-2-3 if the trailing portion (the exit side of the DRUM) is like (D) or (E).

3-2-2. Adjustment of GUIDE ROLLER (SP) Height

1. Loosen the screw with an L SHAPED BOX DRIVER (859C433070) slightly so that the GUIDE ROLLER (SP) rotates freely.
2. Observe the leading edge (the entry side of the DRUM) of the FM waveform. If it is like (B), the GUIDE ROLLER (SP) may be lower than the specified position, and if it is like (C), the GUIDE ROLLER (SP) may be higher. Turn the adjustment screw at the top of the GUIDE ROLLER (SP) so that the FM waveform becomes flat like (A).
   - Turn the adjusting screw counter-clockwise if the roller is low.
   - Turn the adjusting screw clockwise if the roller is high.
3. Tighten the Screw.
4. Perform "Coarse Adjustment of Phase" in Item 3-2-4.

3-2-3. Adjustment of GUIDE ROLLER (TU) Height

1. Loosen the screw with an L SHAPED BOX DRIVER (859C433070) slightly so that the GUIDE ROLLER (TU) rotates freely.
2. Observe the trailing edge (the exit side of the DRUM) of the FM waveform. If it is like (D), the GUIDE ROLLER (TU) may be lower than the specified position, and if it is like (E), the GUIDE ROLLER (TU) may be higher. Turn the adjustment screw at the top of the GUIDE ROLLER (TU) so that the FM waveform becomes flat like (A).
   - Turn the adjusting counter-clockwise if the roller is low.
   - Turn the adjusting clockwise if the roller is high.
3. Tighten the set Screw with an L SHAPED BOX DRIVER (859C433070).
4. Perform "Coarse Adjustment of Phase" in Item 3-2-4.

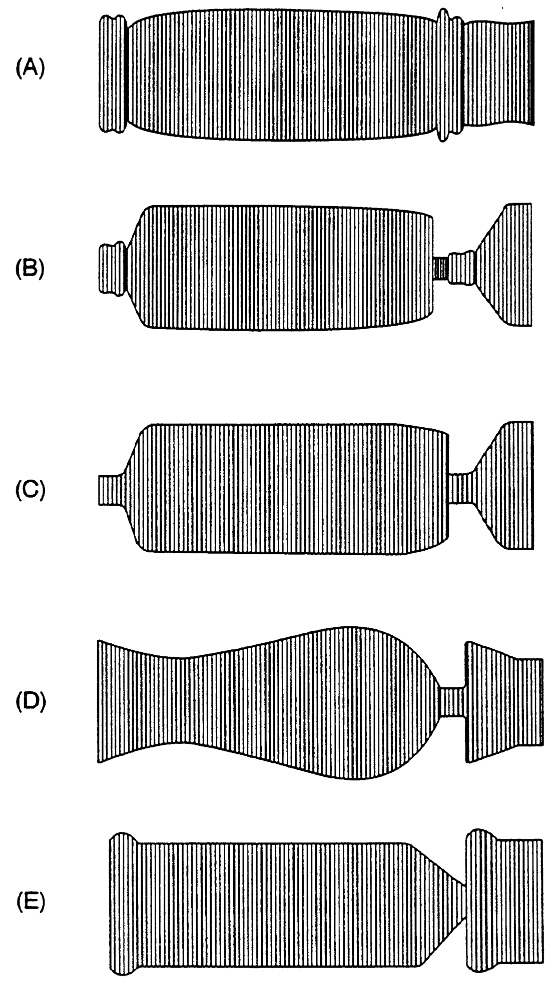


Fig. 3-2-1

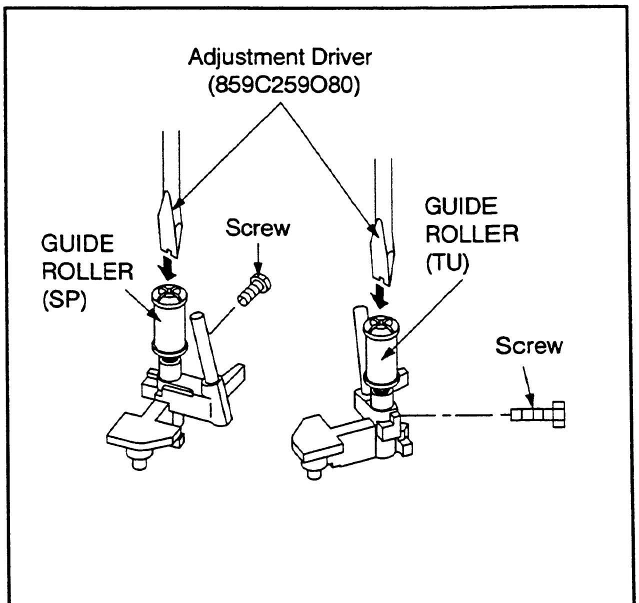


Fig. 3-2-2

3-2-4. Coarse Adjustment of Phase

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Preset tracking. (Refer to Note 1 para 3.)
3. Check the FM waveform after performing "GUIDE ROLLER Adjustment" in Item 3-2-1.
4. If the amplitude of the FM waveform is narrow like (F) because of out of phase, adjust it to the maximum like (G) in Fig. 3-2-4, by the following procedure. Loosen the Screws D and E and insert a screw driver into the Plastic Boss of the MAIN PLATE ASSY. Move the A/C PLATE right and left to adjust the amplitude level of the FM waveform to the maximum. [Waveform G in Fig. 3-2-4]
5. Tighten the Screws D and E.

3-2-5. Check of FM Waveform Flatness

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Change tracking and make sure that the amplitude changes and the FM signal remains flat.

Note : Press the tracing (+)and (–) button during play back to adjust tracking.

3. Adjust the tracking so that the amplitude level of the FM waveform is maximum. Set the oscilloscope so that the amplitude level of the FM waveform is 5 divisions.
4. Adjust tracking so that the peak value of the FM waveform is 4 divisions. Check if the FM waveforms (B), (C), (D) and (E) are within the specified values shown in Fig. 3-2-5.
5. If the waveform is not within the specified value, repeat the procedure in Item 3-2 "Check and Adjustment of the FM Envelope" from the beginning.

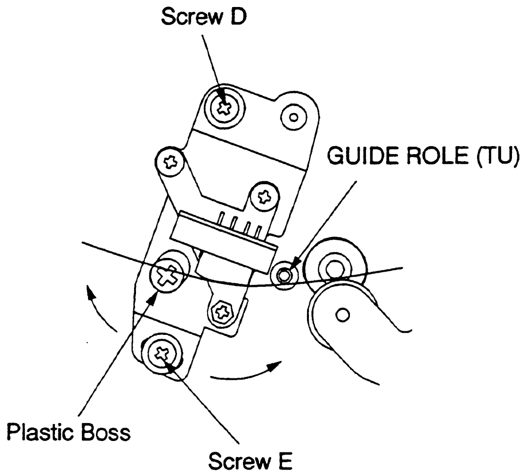


Fig. 3-2-3

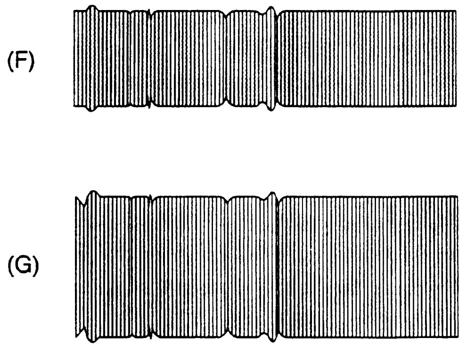
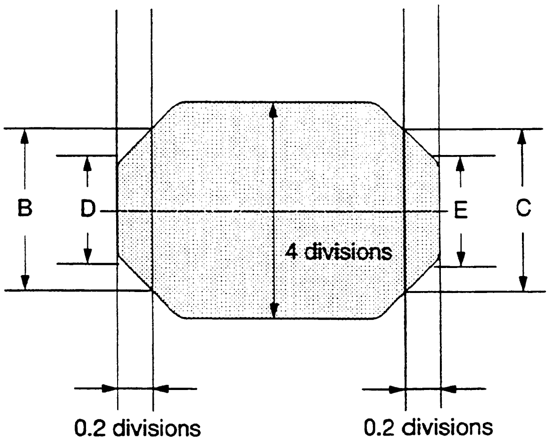


Fig. 3-2-4



B, C	At least 2.8 of the scale
D, E	At least 2.0 of the scale

Fig. 3-2-5

3-2-6. Tape Running Condition at the GUIDE ROLLERs (Check 1)

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Visually check if there is a space between the Tape and the lower flanges of the GUIDE ROLLER (SP) and GUIDE ROLLER (TU).
3. If there is no space, replace the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU) according to Para. 2-35 in "Replacement of Major Parts".
4. Alternately load and unload the Tape several times, check that flatness of the FM waveform does not change.
5. If flatness changes, check the installation condition of the A/C HEAD. If it is abnormally installed, replace the A/C HEAD UNIT according to para. 2-4 and perform "Coarse Adjustment of Phase" in Item 3-2-4 again.

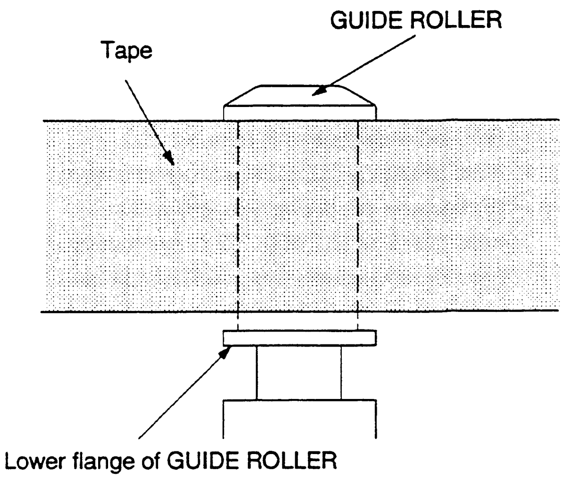


Fig. 3-2-6

3-2-7. Tape Running Condition at the GUIDE ROLLERs (Check 2)

1. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
2. Lightly press and release the top of the GUIDE ROLLER (SP) and GUIDE ROLLER (TU). Check that the FM waveform is quickly restored to the previous level.
3. If the FM waveform is not restored to the previous level, replace the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU) according to para 2-35 in "Replacement of Major Parts".

3-3. Adjustment of A/C HEAD

3-3-1. Adjustment of A/C HEAD Slant

1. Play back a Blank Tape.
2. Slowly turn adjusting screw C counter-clockwise to slightly crease the bottom of the Tape at the flange portion of GUIDE POLE (TU).
3. Slowly return adjusting screw C to remove the crease.
4. Slowly turn the adjusting screw C counter-clockwise again and stop it just before the Tape is creased.

3-3-2. Adjustment of A/C HEAD Azimuth and Height

1. If the height of the CONTROL HEAD is different from the specified value in Fig. 3-3-2, adjust it with the adjusting screw A.
2. After adjustment with the screw A, perform "Adjustment of A/C HEAD Slant" in Item 3-3-1 again.
3. Connect the oscilloscope to the audio output terminal.
4. Play back an Alignment Tape.
   [PM6KH3 : 859C339030]
5. Adjust the audio output level to the maximum by turning the Azimuth adjusting screw B shown in Fig. 3-3-1.
   After the adjustment, pull out the screw driver and check if the audio output level is 4.6 divisions or more, where the maximum audio output level is set to 5.
   If the audio output level is less than 4.6, repeat the procedure 1~ 5.
6. Push the A/C HEAD to the right and left (in the direction A and A' in Fig. 3-3-1) and then release it. Check that the audio output level does not change. (Do not push the A/C HEAD such a degree that the audio output level is reduced less than 3/4 of its maximum value.)
7. Check that the change in the audio output level is less than 2 dB.
8. If the change exceeds 2 dB, perform "Adjustment of A/C HEAD Slant" in Item 3-3-1 and this adjustment.
9. If the above procedure proves to be unsatisfactory, replace the TAPE GUIDE ASSY (SP) and TAPE GUIDE ASSY (TU) according to Para. 2-35 (Replacement of Major Parts).

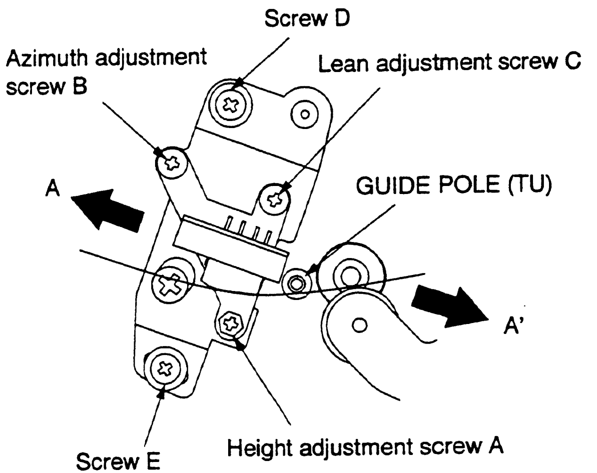

Screw D
Azimuth adjustment screw B
Lean adjustment screw C
A
GUIDE POLE (TU)
A'
Screw E
Height adjustment screw A

Fig. 3-3-1

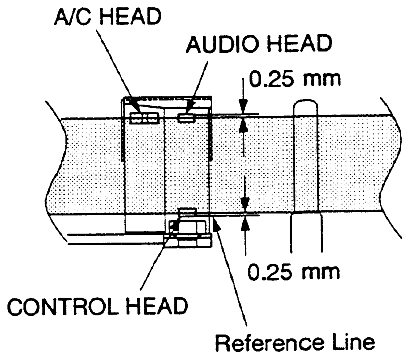

A/C HEAD
AUDIO HEAD
0.25 mm
0.25 mm
CONTROL HEAD
Reference Line

Fig. 3-3-2

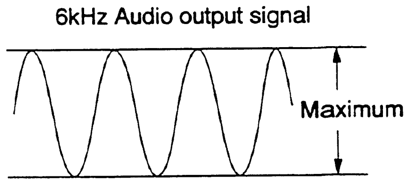

6kHz Audio output signal
Maximum

Fig. 3-3-3

3-4. Adjustment of Phase

1. Set the VCR to the play back mode.
   (Use the Alignment Tape specified below to perform adjustment 1~4).
   [PM3KE6 (CH1) 25 : 859C568050]
2. Preset tracking.
3. Loosen the Screws D and E and insert a screw driver into the Plastic Boss of the MAIN PLATE ASSY. Move the A/C PLATE right and left to adjust the FM output waveform to the maximum.
4. Tighten the screws D and E.
5. Play back the Alignment Tape.
   [NMX : 859C568060]
6. Connect TP2A (the FM waveform output) and the audio output terminal, to the oscilloscope. External Trig. from TP2H. Check that the missing portions of the FM waveform, and that of the Audio waveform are as shown in Fig. 3-4-2.
7. If they are not within the specified value, repeat the procedure 3.
8. Adjust manual tracking so the FM waveform is maximum, and set the oscilloscope so that the waveform is "5" divisions. (Refer to Note in para.3-2-5 about tracking adjustment.)
9. Preset tracking.
10. Check that the FM waveform on the oscilloscope is "4.8" or more divisions.
11. If the FM waveform is below "4.8" divisions after tracking preset, repeat this adjustment.
12. Push the A/C HEAD to the right and left (in the direction of A-A' in Fig. 3-4-1) and then release. Check that the amplitude of the FM waveform does not change from that before shifting the A/C HEAD.
13. When the FM waveform Varies in amplitude level, check the mounting position of the A/C HEAD UNIT. If the position is incorrect, correct the position following Item 2-4 "A/C HEAD UNIT" perform Item 3-3 "Adjustment of A/C HEAD" and repeat this adjustment from the beginning.
14. Alternately load and unload the Tape several times, check that the amplitude of the FM waveform does not change.

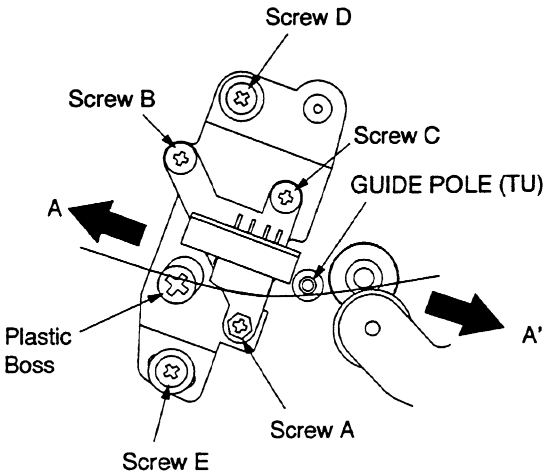


Fig. 3-4-1

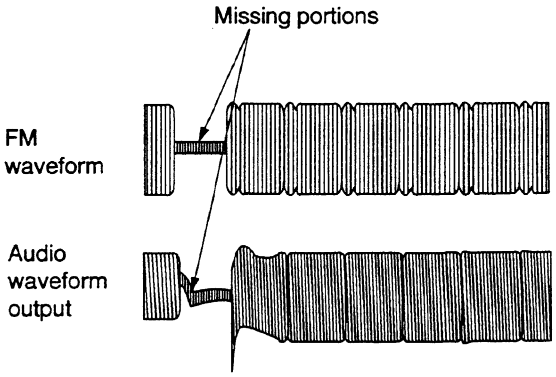


Fig. 3-4-2

3-5. Adjustment of GUIDE ARM ASSY (TU) Height

1. Run a final portion of E-240 Blank Tape in the reverse search mode.
2. Tighten the NYLON NUT of the GUIDE ARM ASSY (TU) with a box driver to lower the GUIDE ARM ASSY (TU) until the Tape is creased at the lower flange of the GUIDE POLE (TU). Then slowly return the NYLON NUT, stop it at the point where the crease is removed. (During adjustment, use an uncovered Cassette Tape, or raise the cover so that the adjustment is available.)

Note : During adjustment, turn the NYLON NUT in the loosening direction. Do not turn the NYLON NUT more than ± 1/2 turn.

3. Eject and insert the Cassette Tape, and then set the VCR to the reverse search mode again. Check that the Tape is not creased at the lower flange of the GUIDE POLE (TU). If the crease is not removed, repeat the procedure 1~ 3.
4. Set the VCR to the play back mode and check that the Tape is not creased at the lower flange of the GUIDE POLE (TU). If the crease is present, repeat "Adjustment of A/C HEAD Slant" in Item 3-3-1 and the succeeding adjustments.
5. Run the start portion of E-180 Blank Tape in the forward search mode and check that the Tape is not creased at the GUIDE POLE (TU).

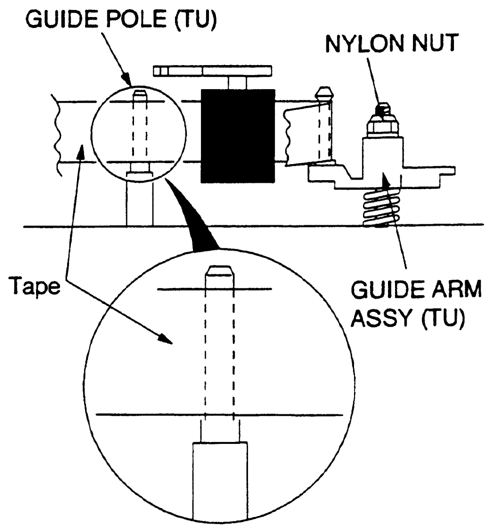


Fig. 3-5

4. Servicing for Tape Jamming during the Loading Process

1. Remove the DECK ASSY.
2. If the Tape is caught in the mechanical parts, remove the Tape.
3. If the TAPE GUIDE ASSY (TU) and TAPE GUIDE ASSY (SP) are in the Tape unlocked position, turn the LOADING MOTOR ASSY shown in Fig. 4 in the direction shown by arrow Ⓐ and move the TAPE GUIDE ASSY (TU) and TAPE GUIDE ASSY (SP) fully in the unloaded position.
4. Turn the CAPSTAN MOTOR shown in Fig. 4 in the direction shown by arrow Ⓑ to wind the Tape up within the Cassette.
5. Turn the LOADING MOTOR ASSY shown in Fig. 4 in the direction shown by arrow Ⓐ to eject the Tape.

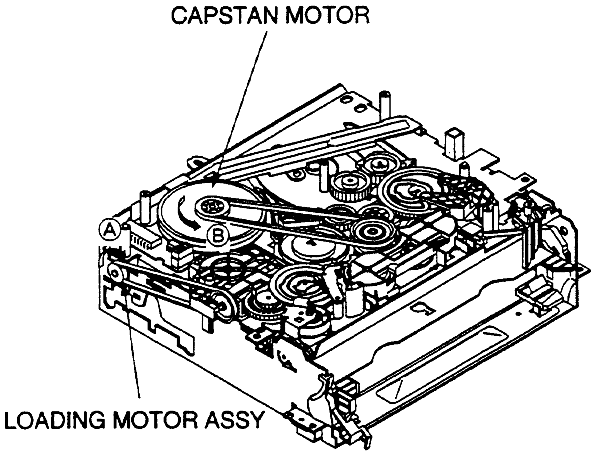


Fig. 4

GLOSSARY OF ABBREVIATIONS

A.E	: Audio Erase
A/C-H	: Audio / Control Head
A-FF	: Audio Flip Flop from Servo Circuit
A-PB	: Audio-Play Back
A-REC	: Audio-Recording
ACC	: Automatic Chroma Control
AFC	: Automatic Frequency Control
AFT	: Automatic Fine Tuning
AGC	: Automatic Gain Control
ALC	: Automatic Level Control
AMP	: Amplifier
ANT	: Antenna
APC	: Automatic Phase Control
ATT	: Attenuator
B/W	: Black and White
BPF	: Band-Pass Filter
BS	: Band Switch
BU	: Back Up
C-LAMP	: Cassette Lamp
C-ROT	: Chroma Rotation
CASS	: Cassette
CE	: Chip Enable
CG	: Character Generator
CK	: Clock
CL	: Clear
CNT	: Counter
CONV	: Converter
CP	: Capstan
CP-F/R	: Capstan-Forward/Reverse
CP-FG	: Capstan-Frequency Generator
CP-M	: Capstan-Motor
CP-OUT	: Capstan Motor Control Out
CS	: Cassette Switch or Chip Select
CTL	: Control
D-FF	: Drum Flip Flop from Servo Circuit
D-M	: Drum Motor
D-OUT	: Drum Motor Control Out
DEMOD	: Demodulator
DET	: Detector
DL	: Delay Line
DOC	: Drop Out Compensator
DOP	: Drop Out Pulse
DTR	: Digital Tracking
EE	: Electronic-Electronic
EF	: Emitter Follower
EMPHA	: Emphasis
EP	: Extended Play
EQ	: Equalizer
ES	: End Sensor
F/R	: Forward/Reverse
F/R-SW	: FF/Rewind Switch
FE-H	: Full Erase Head
FF	: Fast Forward
FG	: Frequency Generator
FL-SW	: Front Loading Switch
FLCONT	: Flying Erase Head Control
FLM	: Front Loading Motor
FM	: Frequency Modulator
FS	: Forward Search
G	: Ground
H-LED	: Humidity-LED
H-SENS	: Humidity-Sensor
H-SYNC	: Horizontal Synchronising Signal
HA	: Head Amplifier
HE	: Hall Element
HP	: Head Phone
HPF	: High-Pass Filter
LED	: Light Emitting Diode
LIM	: Limitter
LM	: Loading Motor
LP	: Long Play
LPF	: Low-Pass Filter
MC	: Mechanical Control
MDA	: Motor Drive Amplifier
MIC	: Microphone
MM	: Mono-Multivibrator
MOD	: Modulator
$\overline{\mathbf{N}}$	: Not Normal
NL DEEMP	: Non Linear Deemphasis
NR	: Non Regulated or Noise Reduction
O-PWV	: ON/OFF Command to supply B + Power
OPE	: Operation
OSC	: Oscillator
OTR	: One Touch Recording
P/R	: Playback/Record
P/R-SW	: Playback/Record-Switch
PB	: Play Back
PCB	: Printed Circuit Board
PG	: Pulse Generator
PIC	: Picture Control
PLL	: Phase Locked Loop
PSC	: Pulse Swallow Control
PWM	: Pulse Width Modulation
PWV	: ON/OFF Command to supply B + Power
REC	: Recording
REC-1, REC-2	: Record Command for the PB/REC Control Circuit
REF	: Reference
REG	: Regulator
REM	: Remaining Time or Remote Control
REW	: Rewind
RIS	: Record Inhibit Switch
RS	: Reverse Search
S/P	: Still/Pause
SENS	: Sensor
SL	: Slow
SP	: Standard Play
SP-SENS	: Supply Reel Sensor
SS	: Start Sensor
STBY	: Stand By
T.P	: Test Point
T-REC	: Timer-Record
TM	: Take up Motor
TR	: Transistor or Tracking
TU-SENS	: Take Up Reel Sensor
UL	: Unload
V-SYNC	: Vertical Synchronising Signal
VCO	: Voltage Controlled Oscillator
VS	: Voltage Synthesizer
VXO	: Variable Crystal Oscillator
W/D	: White/Dark
X'OSC	: Crystal Oscillator
Y/C	: Luminance/Chrominance
YNR	: Y Noise Reduction

CHIP PARTS REPLACEMENT

CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts.
When replacing these parts, note the following cautions.

Cautions :

A. Use fine tipped, well insulated soldering pencil (iron), about 30 watts, and tweezers.
B. Melt the solder and remove the Chip Parts carefully not to tear off the copper foil of the printed circuit board.
C. Discard removed chips ; do not reuse them.
D. Do not apply heat for more than 3 seconds to new Chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch, or damage the Chip Parts when soldering.
G. Supplementary cementing is not required.

1. Removal of Chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melt the solder at both sides alternately, remove one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.

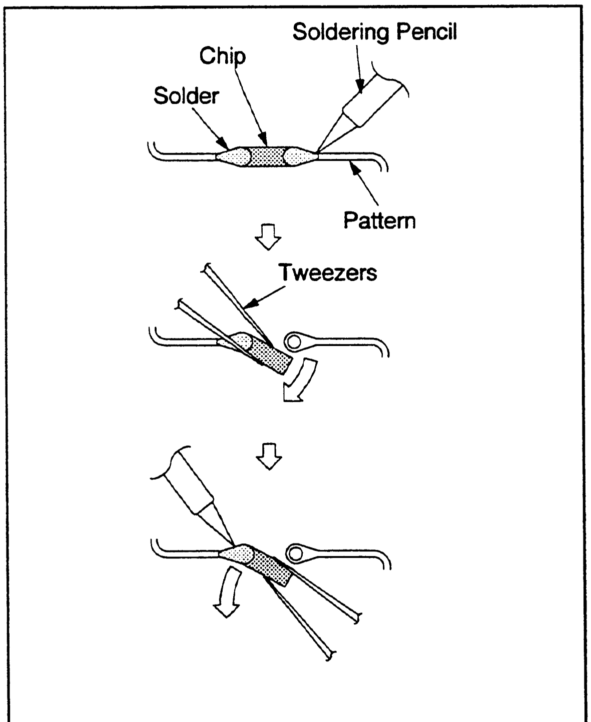

Soldering Pencil
Chip
Solder
Pattern
Tweezers

Fig. 1

2. Removal of Chip Parts (Transistors)

A. Melt the solder of one lead. Lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part from the PCB.

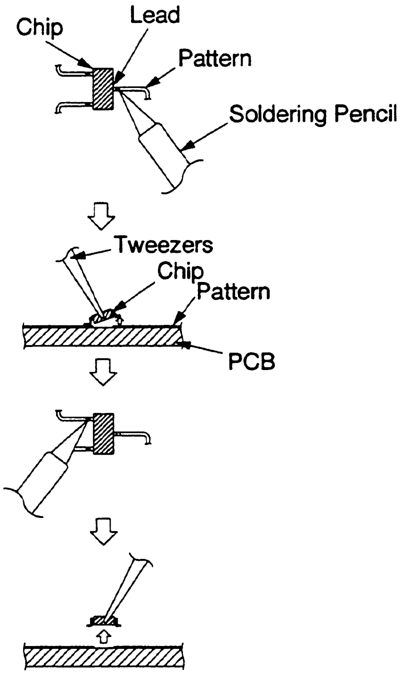

Chip
Lead
Pattern
Soldering Pencil
Tweezers
Chip
Pattern
PCB

Fig. 2

3. Replacement

A. Presolder the contact points of the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in Fig. 3.

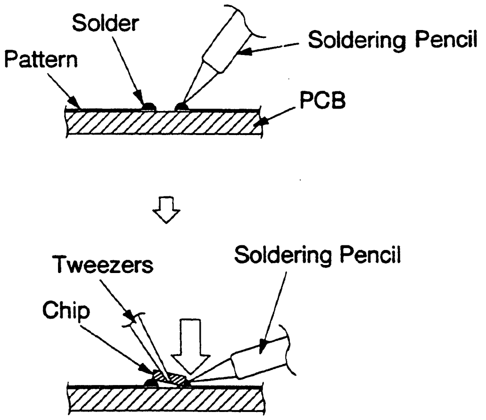
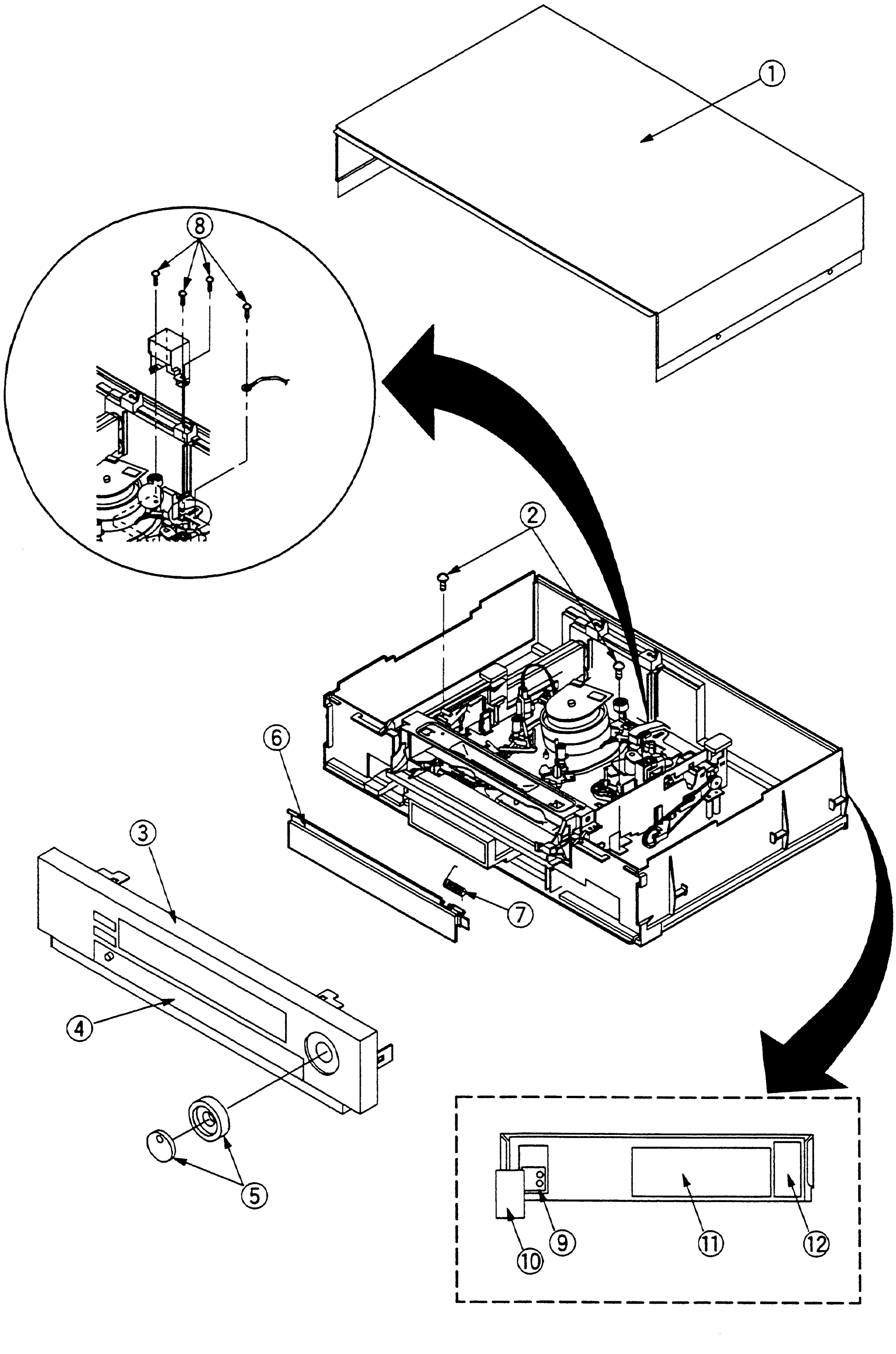

Solder
Pattern
Soldering Pencil
PCB
Tweezers
Soldering Pencil
Chip

Fig. 3

[MEMO]

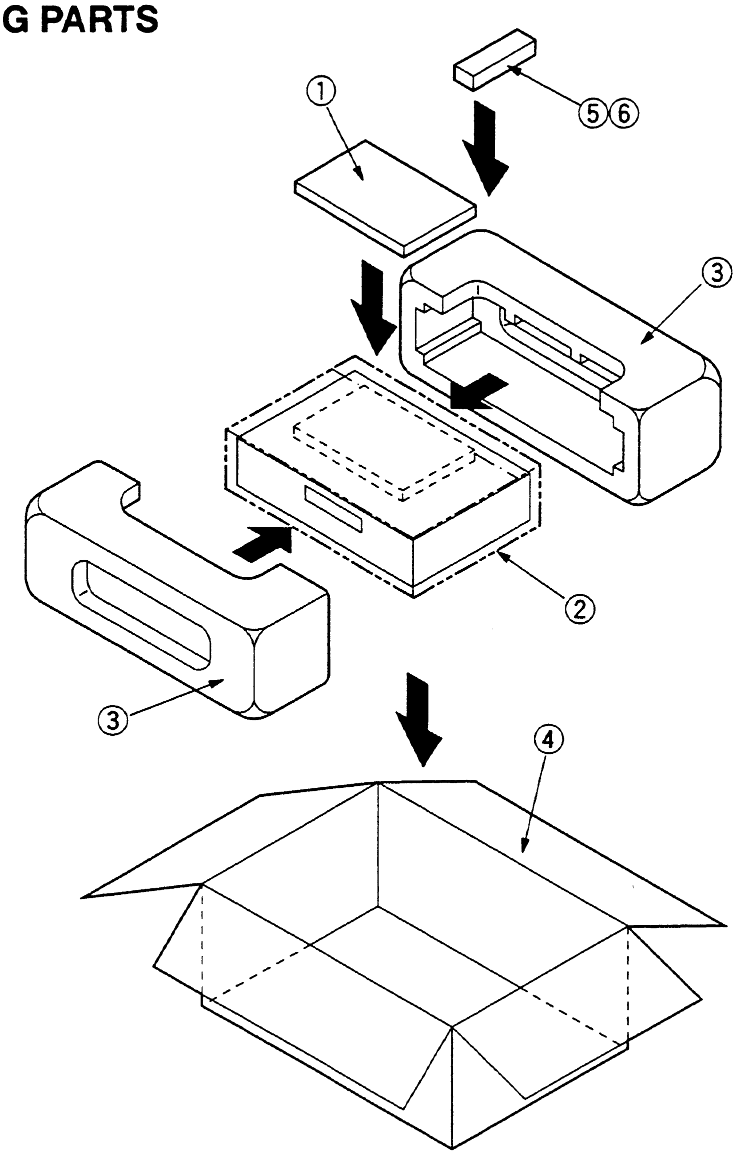
PARTS LIST

1. CABINET ASSEMBLY

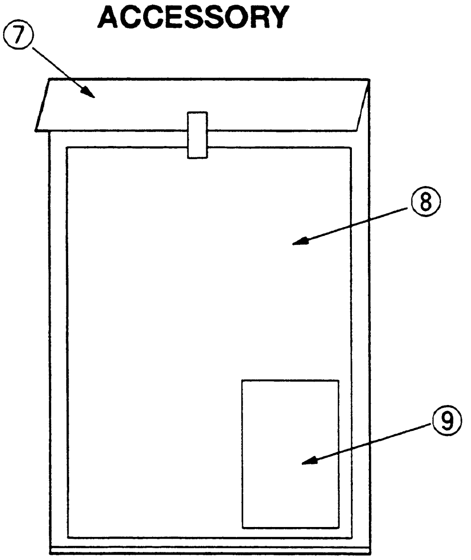

①
⑧
②
⑥
③
⑦
④
⑤
⑩
⑨
⑪
⑫

ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		CABINET ASSEMBLY	
1	968C047001	TOP COVER ASSY	
2	669D221040	SCREW	4 × 12 46LA005
3	968B044003	FRONT ASSY	
4	752C224020	TIMER PLATE	
5	705D038060	JOG/SHUTTLE ASSY	
6	752C222040	CASSETTE DOOR ASSY	
7	572D385010	F/L SPRING	
8	669D229090	SCREW	M3.0 × 4 46LA005
9	761B313020	INLET COVER	
10	451C209010	POWER JACK	[E]
10	451C210010	POWER JACK	[E(B)]
11	761B312010	TERMINAL COVER	
12	760D608010	COVER PLATE	

2. PACKING PARTS



ACCESSORY



ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
PACKING PARTS			
1	--------	ACCESSORY	
2	--------	PACKING SHEET	
3	803A480010	CUSHION	
4	802B602020	PACKING CASE	
5	246C209080	AC POWER CORD	[E]
5	246C221010	AC POWER CORD	[E(B)]
6	831D193050	PACKING BAG	(FOR AC POWER CORD)
ACCESSORY			
7	831D302010	PACKING BAG	(FOR ACCESSORY)
8	872C078010	INSTRUCTION BOOK	

3. ELECTRICAL PARTS

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	INTEGRATED CIRCUITS		
IC201	272P392010	IC	AN3334K
IC2A0	270P195010	IC	LA7346
IC2A1	270P247010	IC	LC89970M
IC2001	275P084010	MOS IC	µPD6458GT-101
IC2007	272P635010	IC	AN3916-(LF)
IC3A0	272P234010	IC	LA7295
IC4A0	274P602060	MOS IC	
IC4A1	263P053020	MOS IC	TC4053BP
IC4A2	272P235010	IC	TA7291S
IC4A3	272P237010	IC	LA6324N
IC5A0	274P940010	MOS IC	M38184MA-283FP
IC5A1	270P070010	MOS IC	AT93C56-10PC
IC5A3	263P328010	MOS IC	MC14070BF
IC5A4	270P528010	IC	PST7029MT
IC901	272P500020	IC	HA17431PA
	TRANSISTORS		
Q 201	260P807010	CHIP TRANSISTOR	UN2212
Q 202	260P807010	CHIP TRANSISTOR	UN2212
Q 204	260P807010	CHIP TRANSISTOR	UN2212
Q 208	260P835030	CHIP TRANSISTOR	2SC2413K-Q
Q 209	260P835030	CHIP TRANSISTOR	2SC2413K-Q
Q 211	260P835030	CHIP TRANSISTOR	2SC2413K-Q
Q 213	260P807010	CHIP TRANSISTOR	UN2212
Q 214	260P255040	TRANSISTOR	2SA950-Y
Q 2A5	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2A6	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2A7	260P807010	CHIP TRANSISTOR	UN2212
Q 2A8	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2B0	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2B1	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2B3	260P807010	CHIP TRANSISTOR	UN2212
Q 2B4	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2B5	260P807010	CHIP TRANSISTOR	UN2212
Q 2B7	260P255040	TRANSISTOR	2SA950-Y
Q 2B8	260P807010	CHIP TRANSISTOR	UN2212
Q 2C0	260P802020	CHIP TRANSISTOR	2SA1235-F
Q 2C1	260P802020	CHIP TRANSISTOR	2SA1235-F
Q 2C2	260P562040	TRANSISTOR	2SA952-K
Q 2C3	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2C4	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2C5	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2C6	260P802020	CHIP TRANSISTOR	2SA1235-F
Q 2C7	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2D0	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2D1	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2D2	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2D3	260P804030	CHIP TRANSISTOR	2SC3052-G
Q 2J0	260P807010	CHIP TRANSISTOR	UN2212
Q 2J2	260P802020	CHIP TRANSISTOR	2SA1235-F
Q 2J3	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2J4	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2J5	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2J7	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2J8	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2J9	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2K0	260P807010	CHIP TRANSISTOR	UN2212
Q 2K3	260P802030	CHIP TRANSISTOR	2SA1235-G
Q 2M0	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2N6	260P807010	CHIP TRANSISTOR	UN2212
Q 2N7	260P807010	CHIP TRANSISTOR	UN2212
Q 2001	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 2007	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 2008	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 2009	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 2010	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 2011	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 2013	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 301	260P807010	CHIP TRANSISTOR	UN2212
Q 3A0	260P629060	TRANSISTOR	2SC3331-S
Q 3A5	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4A1	260P807010	CHIP TRANSISTOR	UN2212
Q 4A2	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4A3	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4A4	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4A5	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4A6	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4A7	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4A8	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4A9	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4B0	260P807010	CHIP TRANSISTOR	UN2212
Q 4B1	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4B6	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 4B7	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 4Z1	260P559030	TRANSISTOR	2SC1740S-S
Q 4Z2	260P632010	TRANSISTOR	DTC124ES
Q 5A0	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5A1	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5A2	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5A3	260P802020	CHIP TRANSISTOR	2SA1235-F
Q 5A4	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 5A5	260P818030	CHIP TRANSISTOR	2SC2412KS
Q 5A6	260P806010	CHIP TRANSISTOR	DTA124EK
Q 5A7	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5A8	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5A9	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5B0	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 5B1	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 5B2	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 5B3	260P817030	CHIP TRANSISTOR	2SA1037K-S
Q 5B4	260P559030	TRANSISTOR	2SC1740S-S
Q 5B5	260P559030	TRANSISTOR	2SC1740S-S
Q 5B6	260P559030	TRANSISTOR	2SC1740S-S
Q 5B7	260P559030	TRANSISTOR	2SC1740S-S
Q 5B8	260P806010	CHIP TRANSISTOR	DTA124EK
Q 5C0	260P807010	CHIP TRANSISTOR	UN2212
Q 5C1	268P076010	PHOTO TRANSISTOR	SPS-1118C-T1
Q 901	261P038010	TRANSISTOR	2SC4234
Q 902	260P522020	TRANSISTOR	2SC3068-AA
Q 903	260P629010	TRANSISTOR	2SC3331-S
Q 904	261P036010	TRANSISTOR	2SB1548
Q 905	260P559050	TRANSISTOR	2SC1740S-E

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
Q 906	260P630010	TRANSISTOR	2SD2012
Q 907	260P559050	TRANSISTOR	2SC1740S-E
Q 908	260C628010	TRANSISTOR	2SA1619A-Q
Q 909	260P559050	TRANSISTOR	2SC1740S-E
Q 910	260P560040	TRANSISTOR	2SA933S-S
	DIODES		
D 201	264P822010	CHIP DIODE	HSM2838
D 2A0	264P568010	DIODE	1SS252
D 2A1	264P568010	DIODE	1SS252
D 3A0	264P808010	CHIP DIODE	DAN202K
D 4A1	264P808010	CHIP DIODE	DAN202K
D 4A3	264P390010	CHIP DIODE	1SS123
D 4A4	264P568010	DIODE	1SS252
D 4A5	264P500020	DIODE	EM01Z
D 5A0	264P696010	LIGHT EMITTING DIODE	SLR-932C-20-AB-T1
D 5A1	264P696010	LIGHT EMITTING DIODE	SLR-932C-20-AB-T1
D 5A2	264P342070	DIODE	HZ4C2
D 5A3	264P568010	DIODE	1SS252
D 5A4	264P696020	LIGHT EMITTING DIODE	SLR-932A-20-B-T1
D 5A5	264P696010	LIGHT EMITTING DIODE	SLR-932C-20-AB-T1
D 5A6	264P568010	DIODE	1SS252
D 5A7	264P568010	DIODE	1SS252
D 5A8	264P568010	DIODE	1SS252
D 5A9	264P568010	DIODE	1SS252
D 5B0	264P568010	DIODE	1SS252
D 5B2	264P808010	CHIP DIODE	DAN202K
D 5B3	264P568010	DIODE	1SS252
D 5B4	264P568010	DIODE	1SS252
D 5B5	264P568010	DIODE	1SS252
D 5B6	264P568010	DIODE	1SS252
D 5B7	264P568010	DIODE	1SS252
D 5B8	264P568010	DIODE	1SS252
D 5B9	264P568010	DIODE	1SS252
D 5C0	264P568010	DIODE	1SS252
D 5C1	264P568010	DIODE	1SS252
D 5C2	264P568010	DIODE	1SS252
D 5C3	264P568010	DIODE	1SS252
D 5C4	264P568010	DIODE	1SS252
D 5C5	264P568010	DIODE	1SS252
D 701	264P621010	LIGHT EMITTING DIODE	SEL2210R TP2
D 7B0	264P568010	DIODE	1SS252
D 801	264P568010	DIODE	1SS252
D 802	264P568010	DIODE	1SS252
D 803	264P568010	DIODE	1SS252
D 804	264P568010	DIODE	1SS252
D 805	264P568010	DIODE	1SS252
D 806	264P568010	DIODE	1SS252
D 813	264P568010	DIODE	1SS252
D 815	264P568010	DIODE	1SS252
D 816	264P568010	DIODE	1SS252
D 817	264P568010	DIODE	1SS252
D 818	264P568010	DIODE	1SS252
D 819	264P568010	DIODE	1SS252
D 820	264P568010	DIODE	1SS252
D 901	264P508040	DIODE	S1WB(A)60
D 903	264P699010	DIODE	AP01C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
D 904	264P825010	DIODE	ERA15-02
D 907	264P695040	DIODE	RK34
D 908	264P695060	DIODE	RK36
D 909	264P663010	DIODE	D1NL20U
D 910	264P663010	DIODE	D1NL20U
D 911	264P527030	DIODE	D1NS4/AK04
D 912	264P456070	DIODE	RD2.4EB
D 913	264P104040	DIODE	HZ30-2
D 914	264P291070	DIODE	HZ20-3
D 917	264P452030	DIODE	HZ5C3
D 918	264P568010	DIODE	1SS252
D 920	264P500020	DIODE	EM01Z
D 921	264P568010	DIODE	1SS252
D 924	264P568010	DIODE	1SS252
D 926	264P488090	DIODE	RD16FB
D 928	264P483070	DIODE	RD5.1FB1
D 929	264P568010	DIODE	1SS252
D 930	264P485060	DIODE	RD7.5FB2
D 933	264P500020	DIODE	EM01Z
	FILTERS		
L 5A0	409P777030	CHIP EMI FILTER	BLM21A10
L 5A1	409P777030	CHIP EMI FILTER	BLM21A10
L 5A2	409P777030	CHIP EMI FILTER	BLM21A10
L 7A1	409P777030	CHIP EMI FILTER	BLM21A10
L 7A2	409P777030	CHIP EMI FILTER	BLM21A10
L 7A3	409P777030	CHIP EMI FILTER	BLM21A10
L 7A4	409P777030	CHIP EMI FILTER	BLM21A10
L 7A5	409P777030	CHIP EMI FILTER	BLM21A10
L 7A6	409P777030	CHIP EMI FILTER	BLM21A10
L 7A7	409P777030	CHIP EMI FILTER	BLM21A10
L 901	351P038040	LINE FILTER	ELF-18D290HB
	COILS		
L 201	325C112050	PEAKING COIL	100µH-K
L 202	325C112050	PEAKING COIL	100µH-K
L 203	325C122050	PEAKING COIL	100µH-K
L 204	325C122050	PEAKING COIL	100µH-K
L 205	325C166090	PEAKING COIL	33µH-J
L 2A1	321C112050	RF COIL	100µH-K
L 2A2	321C112050	RF COIL	100µH-K
L 2A3	325C166030	PEAKING COIL	10µH-J
L 2A5	325C167050	PEAKING COIL	100µH-J
L 2A6	325C167050	PEAKING COIL	100µH-J
L 2A8	325C167000	PEAKING COIL	39µH-J
L 2A9	325C166050	PEAKING COIL	15µH-J
L 2B0	325C166090	PEAKING COIL	33µH-J
L 2B1	325C167040	PEAKING COIL	82µH-J
L 2B2	325C167050	PEAKING COIL	100µH-J
L 2B3	325C167050	PEAKING COIL	100µH-J
L 2B5	325C167050	PEAKING COIL	100µH-J
L 2B6	325C166050	PEAKING COIL	15µH-J
L 2B7	325C167050	PEAKING COIL	100µH-J
L 2G4	325C167050	PEAKING COIL	100µH-J
L 2H0	325C167050	PEAKING COIL	100µH-J
L 2H1	325C168030	PEAKING COIL	470µH-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
L 2J0	325C167050	PEAKING COIL	100µH-J
L 2J1	325C166080	PEAKING COIL	27µH-J
L 2J2	325C166080	PEAKING COIL	27µH-J
L 2J3	325C167050	PEAKING COIL	100µH-J
L 2J4	325C168000	PEAKING COIL	270µH-J
L 2J5	325C166010	PEAKING COIL	6.8µH-J
L 2J6	325C166030	PEAKING COIL	10µH-J
L 2J7	325C167090	PEAKING COIL	220µH-J
L 2J8	325C166090	PEAKING COIL	33µH-J
L 2K1	325C167050	PEAKING COIL	100µH-J
L 2N0	325C168010	PEAKING COIL	330µH-J
L 2N2	325C167050	PEAKING COIL	100µH-J
L 2Q2	325C167010	PEAKING COIL	47µH-J
L 2Q3	325C166050	PEAKING COIL	15µH-J
L 2Q4	325C168060	PEAKING COIL	820µH-J
L 2R4	325C167050	PEAKING COIL	100µH-J
L 2001	325C167050	PEAKING COIL	100µH-J
L 2002	325C166060	PEAKING COIL	18µH-J
L 2005	325C167050	PEAKING COIL	100µH-J
L 2007	325C167050	PEAKING COIL	100µH-J
L 2009	325C167050	PEAKING COIL	100µH-J
L 2010	325C167040	PEAKING COIL	82µH-J
L 3A0	321C113070	RF COIL	1000µH-K
L 3A1	321C114080	RF COIL	8200µH-J
L 4A0	325C167050	PEAKING COIL	100µH-J
L 902	321C141090	RF COIL	33µH-K
T 3A0	409P852030	BIAS OSCILLATOR COIL	
	TRANSFORMERS		
T 901	350P711020	POWER TRANSFORMER	
	VARIABLE RESISTORS		
VR201	127C380050	SEMIFIXED RESISTOR	1/5W B2kΩ-M
VR202	127C380050	SEMIFIXED RESISTOR	1/5W B2kΩ-M
VR2A0	127C480090	SEMIFIXED RESISTOR	1/5W B20kΩ+-25%
VR2A1	127C490090	SEMIFIXED RESISTOR	1/5W B20kΩ+-25%
VR2A2	127C480080	SEMIFIXED RESISTOR	1/5W B10kΩ+-25%
VR2A5	127C480090	SEMIFIXED RESISTOR	1/5W B20kΩ+-25%
VR2001	127C391010	SEMIFIXED RESISTOR	1/5W B50kΩ-M
VR3A0	127C381020	SEMIFIXED RESISTOR	1/5W B100kΩ-M
VR3A1	127C380080	SEMIFIXED RESISTOR	1/5W B10kΩ-M
VR4A0	127C391020	SEMIFIXED RESISTOR	1/5W B100kΩ-M
VR701	129D167060	VR PCB	1/20W B5kΩ-15F CS
	RESISTORS		
R 201	103P472050	CHIP RESISTOR	1/10W 1kΩ-F
R 202	103P400010	CHIP RESISTOR	1/10W 10Ω-J
R 203	103P400010	CHIP RESISTOR	1/10W 10Ω-J
R 204	103P472030	CHIP RESISTOR	1/10W 820Ω-F
R 205	103P472040	CHIP RESISTOR	1/10W 910Ω-F
R 206	103P400010	CHIP RESISTOR	1/10W 10Ω-J
R 207	103P400010	CHIP RESISTOR	1/10W 10Ω-J
R 209	103P471020	CHIP RESISTOR	1/10W 300Ω-F
R 210	103P471020	CHIP RESISTOR	1/10W 300Ω-F
R 211	103P472070	CHIP RESISTOR	1/10W 1.2kΩ-F
R 212	103P471050	CHIP RESISTOR	1/10W 390Ω-F

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 213	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 214	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 216	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 219	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 220	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 224	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 225	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 227	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 228	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 229	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 230	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 233	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 234	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 235	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2A2	103P473080	CHIP RESISTOR	1/10W 3.6kΩ-F
R 2A3	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2A4	103P472050	CHIP RESISTOR	1/10W 1kΩ-F
R 2A5	103P473090	CHIP RESISTOR	1/10W 3.9kΩ-F
R 2A6	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 2A7	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 2A8	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2B0	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 2B1	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 2B2	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2B3	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2B4	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2B6	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 2B7	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2B8	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 2B9	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2C0	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2C2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2C3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2C4	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 2C5	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2C6	103P471090	CHIP RESISTOR	1/10W 560Ω-F
R 2C7	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2C9	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 2D1	103P471030	CHIP RESISTOR	1/10W 330Ω-F
R 2D3	103P470010	CHIP RESISTOR	1/10W 100Ω-F
R 2D4	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2D5	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2D6	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 2D7	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 2D9	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2E0	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2E2	103P472010	CHIP RESISTOR	1/10W 680Ω-F
R 2E3	103P472070	CHIP RESISTOR	1/10W 1.2kΩ-F
R 2E4	103P472060	CHIP RESISTOR	1/10W 1.1kΩ-F
R 2E5	103P471070	CHIP RESISTOR	1/10W 470Ω-F
R 2E6	103P403090	CHIP RESISTOR	1/10W 15kΩ-J
R 2E7	103P404000	CHIP RESISTOR	1/10W 18kΩ-J
R 2F0	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2F1	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2F2	103P471080	CHIP RESISTOR	1/10W 510Ω-F
R 2F3	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2F4	103P401030	CHIP RESISTOR	1/10W 100Ω-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 2F5	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2F6	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2F7	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2F8	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2F9	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2G0	103P472040	CHIP RESISTOR	1/10W 910Ω-F
R 2G3	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2G5	103P404080	CHIP RESISTOR	1/10W 82kΩ-J
R 2G6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2G7	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2H1	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 2H2	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2H4	103P402000	CHIP RESISTOR	1/10W 390Ω-J
R 2H5	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 2H6	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2H7	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 2H8	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2H9	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2J1	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2J2	103P471090	CHIP RESISTOR	1/10W 560Ω-F
R 2J3	103P472040	CHIP RESISTOR	1/10W 910Ω-F
R 2J6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2J7	103P401060	CHIP RESISTOR	1/10W 180Ω-J
R 2J8	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 2J9	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2K1	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2K2	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2K4	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2K5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2K6	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 2K7	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2K8	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2K9	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2L0	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 2L1	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2L2	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2L3	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2L4	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2L7	103P402040	CHIP RESISTOR	1/10W 820Ω-J
R 2L8	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 2L9	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 2M0	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2M1	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2M2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2M3	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2M4	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2M5	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 2N0	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2N1	103P403090	CHIP RESISTOR	1/10W 15kΩ-J
R 2N2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2N3	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2N4	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2N5	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2N6	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2N7	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 2N8	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2P2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 2P3	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F
R 2P4	103P472090	CHIP RESISTOR	1/10W 1.5kΩ-F
R 2P5	103P409090	CHIP RESISTOR	1/10W 75Ω-J
R 2S0	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 2S1	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2T9	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2U0	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 2U1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2U2	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 2U3	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 2U5	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 2U6	103P402040	CHIP RESISTOR	1/10W 820Ω-J
R 2U7	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2U8	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2001	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2002	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 2003	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2004	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2007	103P401050	CHIP RESISTOR	1/10W 150Ω-J
R 2008	103P476090	CHIP RESISTOR	1/10W 68kΩ-F
R 2009	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 2010	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 2011	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2012	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2013	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2027	103P476080	CHIP RESISTOR	1/10W 62kΩ-F
R 2028	103P405030	CHIP RESISTOR	1/10W 220kΩ-J
R 2031	103P475070	CHIP RESISTOR	1/10W 22kΩ-F
R 2032	103P474090	CHIP RESISTOR	1/10W 10kΩ-F
R 2033	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2034	103P478010	CHIP RESISTOR	1/10W 220kΩ-F
R 2035	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2036	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2037	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2041	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2042	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2043	103P405030	CHIP RESISTOR	1/10W 220kΩ-J
R 2044	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 2046	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 2053	103P409090	CHIP RESISTOR	1/10W 75Ω-J
R 316	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 3A0	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 3A1	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 3A3	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 3A4	103P401060	CHIP RESISTOR	1/10W 180Ω-J
R 3A6	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 3A7	103P401040	CHIP RESISTOR	1/10W 120Ω-J
R 3A8	103P400010	CHIP RESISTOR	1/10W 10Ω-J
R 3B0	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 3B1	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 3B4	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 3B6	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 3D0	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 3D1	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 3D2	103P404060	CHIP RESISTOR	1/10W 56kΩ-J
R 3E5	103P404000	CHIP RESISTOR	1/10W 18kΩ-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 3E6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 3G0	103P401000	CHIP RESISTOR	1/10W 56Ω-J
R 3G9	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 3H0	103P402000	CHIP RESISTOR	1/10W 390Ω-J
R 3H1	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 3H2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 4A0	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 4A1	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 4A2	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 4A3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 4A4	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 4A5	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 4A6	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 4A7	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4A8	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4A9	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4B0	103P405020	CHIP RESISTOR	1/10W 180kΩ-J
R 4B1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4B2	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4B3	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 4B6	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 4B7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4B8	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4B9	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4C0	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 4C1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4C3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4C4	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4C5	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 4C6	103P404000	CHIP RESISTOR	1/10W 18kΩ-J
R 4C7	103P405050	CHIP RESISTOR	1/10W 330kΩ-J
R 4C8	103P404080	CHIP RESISTOR	1/10W 82kΩ-J
R 4C9	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 4D0	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 4D1	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 4D2	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 4D3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4D4	103P405010	CHIP RESISTOR	1/10W 150kΩ-J
R 4D5	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4D6	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 4D7	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4D8	103P404060	CHIP RESISTOR	1/10W 56kΩ-J
R 4E0	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 4E1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4E2	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4E3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 4E4	103P404060	CHIP RESISTOR	1/10W 56kΩ-J
R 4E5	103P405050	CHIP RESISTOR	1/10W 330kΩ-J
R 4E6	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 4E7	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4E8	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 4E9	103P405010	CHIP RESISTOR	1/10W 150kΩ-J
R 4F1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4F2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 4F3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 4F4	103P405030	CHIP RESISTOR	1/10W 220kΩ-J
R 4F5	103P473050	CHIP RESISTOR	1/10W 2.7kΩ-F
R 4F6	103P472090	CHIP RESISTOR	1/10W 1.5kΩ-F
R 4F9	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4G1	103P405030	CHIP RESISTOR	1/10W 220kΩ-J
R 4G6	103P405010	CHIP RESISTOR	1/10W 150kΩ-J
R 4K4	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 4K5	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 4K6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 4K7	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 5A1	103P404080	CHIP RESISTOR	1/10W 82kΩ-J
R 5A2	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5A3	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5A5	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5A6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5A7	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5A8	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5B0	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 5B1	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5B2	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 5B3	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5B4	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 5B5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5B8	103P405050	CHIP RESISTOR	1/10W 330kΩ-J
R 5C1	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5C4	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5C5	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5C7	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5C8	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5C9	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5D0	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5D1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5D2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5D3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5D4	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5D5	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5D6	103P476000	CHIP RESISTOR	1/10W 30kΩ-F
R 5D7	103P476000	CHIP RESISTOR	1/10W 30kΩ-F
R 5D8	103P476000	CHIP RESISTOR	1/10W 30kΩ-F
R 5D9	103P476000	CHIP RESISTOR	1/10W 30kΩ-F
R 5E0	103P475030	CHIP RESISTOR	1/10W 15kΩ-F
R 5E1	103P475030	CHIP RESISTOR	1/10W 15kΩ-F
R 5E2	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5E3	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5E4	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5E5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5E8	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5E9	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5F0	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5F2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 5F3	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 5F4	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 5F6	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 5F7	103P404000	CHIP RESISTOR	1/10W 18kΩ-J
R 5F8	103P472060	CHIP RESISTOR	1/10W 1.1kΩ-F
R 5G0	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 5G3	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5G4	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5G6	103P406090	CHIP METAL RESISTOR	1/10W 4.7MΩ-K

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 5G7	103P406090	CHIP METAL RESISTOR	1/10W 4.7MΩ-K
R 5G8	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 5G9	103P477010	CHIP RESISTOR	1/10W 82kΩ-F
R 5H0	103P476030	CHIP RESISTOR	1/10W 39kΩ-F
R 5H1	103P475060	CHIP RESISTOR	1/10W 20kΩ-F
R 5H2	103P479000	CHIP METAL RESISTOR	1/10W 510kΩ-F
R 5H3	103P479010	CHIP RESISTOR	1/10W 560kΩ-F
R 5H4	103P479000	CHIP METAL RESISTOR	1/10W 510kΩ-F
R 5H5	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 5H6	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5H7	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5J7	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 5J8	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5J9	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5K0	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5K1	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5K2	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5K3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5K4	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5M0	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M2	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 5M3	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M4	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M5	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 5M6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M7	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M8	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
R 908	109C010010	COMPOSITION RESISTOR	1/2W 1MΩ-K
R 930	102P108060	WIRE RESISTOR	2W 3.3Ω-J
RJ 01	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 02	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 03	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 04	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 05	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 06	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 10	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 11	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 13	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 14	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 16	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 17	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 18	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 20	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 21	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 22	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 23	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 24	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 25	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 26	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 27	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 28	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 29	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 30	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 31	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 32	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 33	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 34	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 35	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 36	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 37	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 38	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 39	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 40	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 41	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 42	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 43	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 44	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 45	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 46	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 47	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 48	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 49	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 50	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 51	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 52	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 53	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 54	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 55	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
RJ 1	103P409050	CHIP RESISTOR	0.1W 0Ω(2125)
	CAPACITORS AND TRIMMERS		
C 201	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 203	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 204	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 206	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 209	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 211	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 213	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 214	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 215	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 217	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 218	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 219	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 220	141P135080	CHIP CAPACITOR	F25V 0.1µF-Z
C 222	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 223	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 224	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 225	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 226	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 227	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 228	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 229	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 236	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 237	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 238	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 244	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 245	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 247	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2A2	154P324060	CHIP CAPACITOR	SL50V 270pF-J
C 2A4	154P325000	CHIP CAPACITOR	SL50V 390pF-J
C 2A5	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2A8	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z

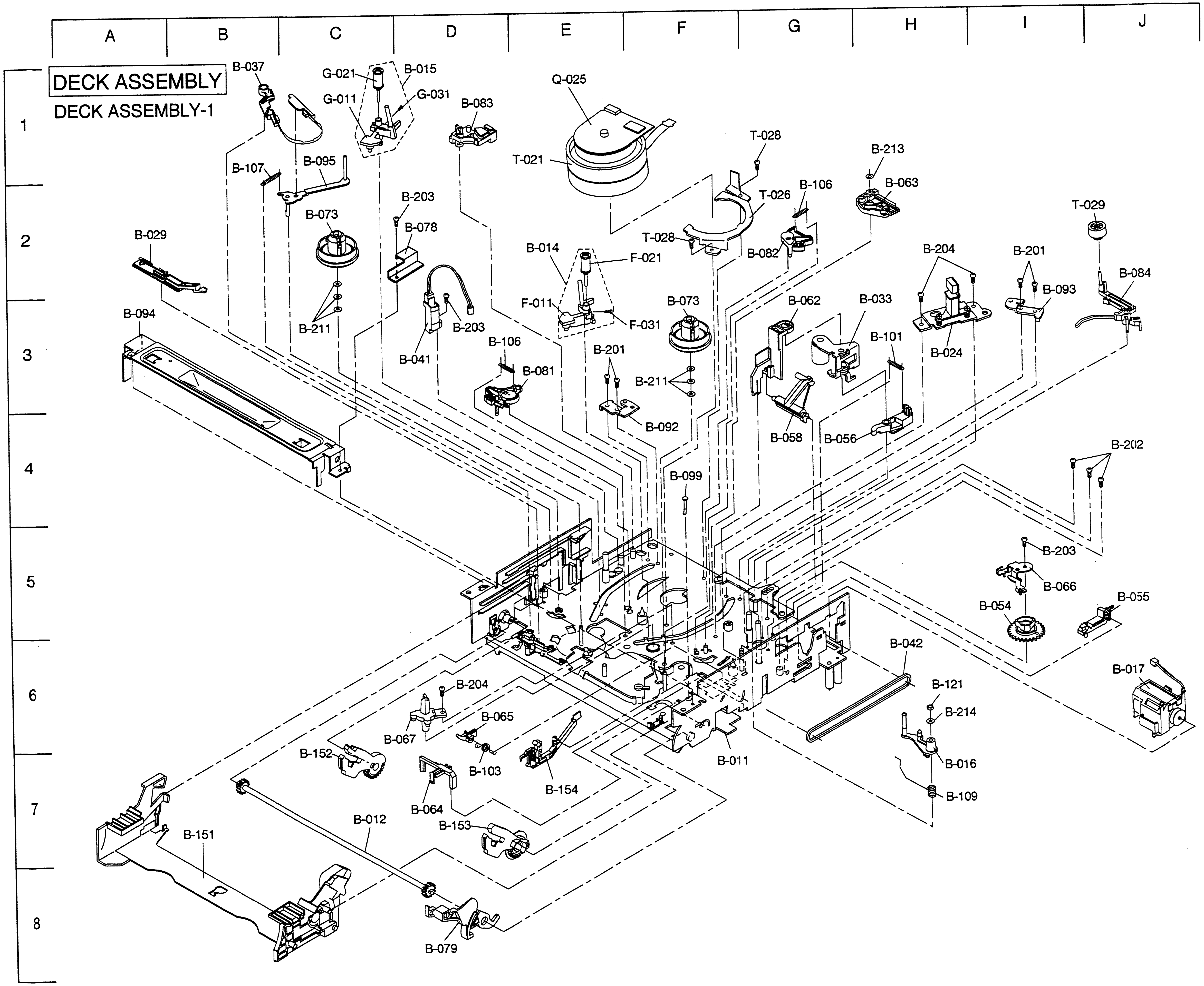
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C 2A9	141P137040	CHIP CAPACITOR	B25V 0.022µF-K
C 2B0	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2B1	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2B3	141P137080	CHIP CAPACITOR	B25V 0.047µF-K
C 2B5	141P137040	CHIP CAPACITOR	B25V 0.022µF-K
C 2B7	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2C3	141P137080	CHIP CAPACITOR	B25V 0.047µF-K
C 2C4	141P137080	CHIP CAPACITOR	B25V 0.047µF-K
C 2C6	141P137080	CHIP CAPACITOR	B25V 0.047µF-K
C 2C7	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 2D2	154P333030	CHIP CAPACITOR	CH50V 82pF-J
C 2D3	154P331090	CHIP CAPACITOR	CH50V 22pF-J
C 2D4	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2D8	154P323000	CHIP CAPACITOR	SL50V 56pF-J
C 2E0	154P321060	CHIP CAPACITOR	SL50V 15pF-J
C 2E1	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 2F0	154P323020	CHIP CAPACITOR	SL50V 68pF-J
C 2F1	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2F2	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2F3	154P321060	CHIP CAPACITOR	SL50V 15pF-J
C 2F4	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2F6	154P324060	CHIP CAPACITOR	SL50V 270pF-J
C 2F7	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2F8	154P324060	CHIP CAPACITOR	SL50V 270pF-J
C 2F9	154P324020	CHIP CAPACITOR	SL50V 180pF-J
C 2G0	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2G1	154P322060	CHIP CAPACITOR	SL50V 39pF-J
C 2G2	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2G3	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2G5	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2H0	154P322060	CHIP CAPACITOR	SL50V 39pF-J
C 2H3	154P324040	CHIP CAPACITOR	SL50V 220pF-J
C 2H4	154P322040	CHIP CAPACITOR	SL50V 33pF-J
C 2J0	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2J2	154P323000	CHIP CAPACITOR	SL50V 56pF-J
C 2J3	154P322060	CHIP CAPACITOR	SL50V 39pF-J
C 2J7	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2J8	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2J9	154P323000	CHIP CAPACITOR	SL50V 56pF-J
C 2K0	154P323000	CHIP CAPACITOR	SL50V 56pF-J
C 2K1	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2K2	154P322040	CHIP CAPACITOR	SL50V 33pF-J
C 2K3	154P323020	CHIP CAPACITOR	SL50V 68pF-J
C 2K4	154P323000	CHIP CAPACITOR	SL50V 56pF-J
C 2K5	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2M0	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2M1	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2M3	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2M6	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2M7	141P137040	CHIP CAPACITOR	B25V 0.022µF-K
C 2N0	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2N1	154P324000	CHIP CAPACITOR	SL50V 150pF-J
C 2N2	154P324000	CHIP CAPACITOR	SL50V 150pF-J
C 2N3	154P323020	CHIP CAPACITOR	SL50V 68pF-J
C 2N5	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2N7	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 2N8	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C 2P0	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2Q0	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2Q2	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2Q4	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2Q5	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2Q6	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2U1	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2U2	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2U5	154P321040	CHIP CAPACITOR	SL50V 12pF-J
C 2002	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2005	154P332050	CHIP CAPACITOR	CH50V 39pF-J
C 2008	154P331030	CHIP CAPACITOR	CH50V 12pF-J
C 2016	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2018	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2019	154P323080	CHIP CAPACITOR	SL50V 120pF-J
C 2030	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2050	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2051	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 2055	154P331030	CHIP CAPACITOR	CH50V 12pF-J
C 2060	154P331010	CHIP CAPACITOR	CH50V 10pF-C
C 2062	154P332050	CHIP CAPACITOR	CH50V 39pF-J
C 2063	154P323060	CHIP CAPACITOR	SL50V 100pF-J
C 300	154P327040	CHIP CAPACITOR	SL50V 3900pF-J
C 3A1	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 3A2	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 3A3	141P130060	CHIP CAPACITOR	B50V 560pF-K
C 3A8	141P131030	CHIP CAPACITOR	B50V 2200pF-K
C 3D3	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 3D4	141P134030	CHIP CAPACITOR	F50V 0.22µF-Z
C 3D5	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 3E7	141P130010	CHIP CAPACITOR	B50V 220pF-K
C 3E8	189P098010	CERAMIC CAPACITOR	E25V 1µF-Z
C 3E9	189P098010	CERAMIC CAPACITOR	E25V 1µF-Z
C 4A0	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 4A1	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 4A5	141P137070	CHIP CAPACITOR	B25V 0.039µF-K
C 4A7	154P326000	CHIP CAPACITOR	SL50V 1000pF-J
C 4B4	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 4B5	141P130010	CHIP CAPACITOR	B50V 220pF-K
C 4B7	141P130010	CHIP CAPACITOR	B50V 220pF-K
C 4B8	141P131060	CHIP CAPACITOR	B50V 3900pF-K
C 4C0	141P139000	CHIP CAPACITOR	B25V 0.056µF-K
C 4C3	141P131080	CHIP CAPACITOR	B50V 5600pF-K
C 4C7	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 4C8	141P139030	CHIP CAPACITOR	B25V 0.1µF-K
C 4C9	141P131080	CHIP CAPACITOR	B50V 5600pF-K
C 4D1	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 4D3	154P335010	CHIP CAPACITOR	CH50V 470pF-J
C 4E7	141P131050	CHIP CAPACITOR	B50V 3300pF-K
C 4E9	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 4F0	141P131060	CHIP CAPACITOR	B50V 3900pF-K
C 4F5	141P132010	CHIP CAPACITOR	B50V 0.01µF-K
C 5A0	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 5A1	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 5A2	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 5A5	141P133080	CHIP CAPACITOR	F50V 0.01µF-Z
C 5A6	141P133090	CHIP CAPACITOR	F50V 0.022µF-Z

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C 5A8	141P133090	CHIP CAPACITOR	F50V 0.022μF-Z
C 5B0	141P133090	CHIP CAPACITOR	F50V 0.022μF-Z
C 5B1	141P133080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5B2	141P133080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5B3	141P137080	CHIP CAPACITOR	B25V 0.047μF-K
C 5B4	141P137080	CHIP CAPACITOR	B25V 0.047μF-K
C 5B5	141P137080	CHIP CAPACITOR	B25V 0.047μF-K
C 5B6	141P133080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5B7	141P133090	CHIP CAPACITOR	F50V 0.022μF-Z
C 5B8	141P133090	CHIP CAPACITOR	F50V 0.022μF-Z
C 5B9	141P133090	CHIP CAPACITOR	F50V 0.022μF-Z
C 5C0	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 5C1	154P331070	CHIP CAPACITOR	CH50V 18pF-J
C 5C2	154P331010	CHIP CAPACITOR	CH50V 10pF-C
C 5C3	154P331010	CHIP CAPACITOR	CH50V 10pF-C
C 5C5	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 5D7	189P098010	CERAMIC CAPACITOR	E25V 1μF-Z
C 901	189P153040	M-P CAPACITOR-AC	AC250V 0.1μF-M
C 904	189P153040	M-P CAPACITOR-AC	AC250V 0.1μF-M
C 909	189P094020	CERAMIC CAPACITOR AC	ACT4K E3300pF-M
	SWITCHES		
S 2A0	432P089040	KEY BOARD SWITCH	INITIAL RESET
S 701	432P089040	KEY BOARD SWITCH	EJECT
S 702	432P089040	KEY BOARD SWITCH	POWER
S 703	432P089020	KEY BOARD SWITCH	TRACKING (+)
S 704	432P089020	KEY BOARD SWITCH	POSITION/STILL ADJ (+)
S 705	432P089020	KEY BOARD SWITCH	LOCK
S 707	432P089020	KEY BOARD SWITCH	TRACKING (-)
S 708	432P089020	KEY BOARD SWITCH	POSITION/STILL ADJ (-)
S 709	431C079020	SLIDE SWITCH	COLOR B/W
S 801	432P089020	KEY BOARD SWITCH	PAUSE
S 802	432P089020	KEY BOARD SWITCH	TIMER REC
S 803	432P089020	KEY BOARD SWITCH	MODE (-)
S 804	432P089020	KEY BOARD SWITCH	COUNTER RESET
S 805	432P089020	KEY BOARD SWITCH	PB
S 806	432P089020	KEY BOARD SWITCH	SKIP/INDEX MEMORY
S 807	432P089020	KEY BOARD SWITCH	MODE (+)
S 808	432P089020	KEY BOARD SWITCH	DISPLAY
S 809	432P089040	KEY BOARD SWITCH	STOP
S 810	432P089040	KEY BOARD SWITCH	REC
S 8A1	439P023040	JOG SWITCH	SRGPHJ077A
	MISCELLANEOUS		
F 901	283D147040	FUSE	T2A
J 3A1	451C108030	RCA PIN JACK	
J 3A2	451C108030	RCA PIN JACK	
J 7A1	440B128010	TERMINAL BOARD	
J 901	451C210010	POWER JACK	[EB]
J 902	451C209010	POWER JACK	[E]
JJ KJ	243C155020	CARD LEAD WIRE	9PIN L=100
K 7A0	287P045010	RELAY	RA5W-OH-K
M 572	288P180010	CAPSTAN MOTOR	F2QKB26
MA DA	243C193030	CARD LEAD WIRE	7PIN L=120
MD DD	243C193020	CARD LEAD WIRE	7P L=100
MR SR	243C159020	CARD LEAD WIRE	17P L=100
MS SS	243C159020	CARD LEAD WIRE	17P L=100
PC901	268P079010	PHOTO COUPLER	PC123FY
SA901	299P198010	SURGE ABSORBER	ERZV07D471
T 371	460P055050	FE HEAD	
V 5A0	253P128010	FLOUR DISPLAY TUBE	25U39115TA
X 2A1	285P083010	CRYSTAL RESONATOR	4.43362MHz
X 2000	285P084010	CRYSTAL RESONATOR	17.7345MHz
X 5A0	285P054010	CRYSTAL RESONATOR	32.768kHz
X 5A1	285P235010	CRYSTAL RESONATOR	8.3886MHz
	PRINTED CIRCUIT BOARD ASSY'S		
	925B012003	MAIN PCB ASSY	
	928D392003	OPE R PCB ASSY	
	928D391001	OPE L PCB ASSY	
	925B014002	POWER PCB ASSY	[E]
	925B051002	POWER PCB ASSY	[EB]
	928C908002	TERMINAL PCB ASSY	
	925B013002	Y/C PCB ASSY	

DECK ASSEMBLY

DECK ASSEMBLY-1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B-011
B-016
B-109
B-064
B-012
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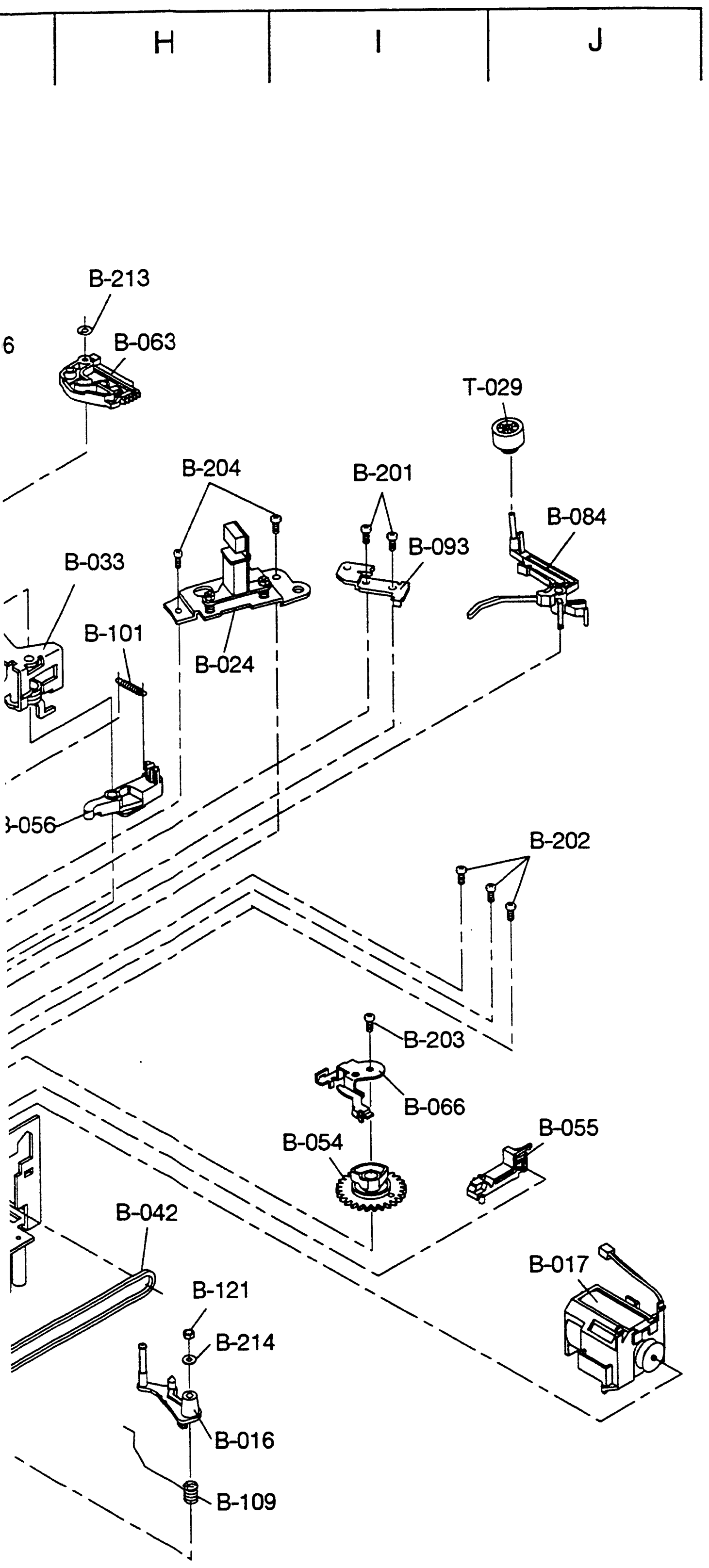
B-151
B-079

* Settled Service Parts

ITEM	PARTS NO.	*	ADDRES	
B-011	948A194O01		F-7	
B-012	948C338O01	○	C-7	
B-014	948D059O01	○	E-2	
B-015	948D060O01	○	D-1	
B-016	948D062O01	○	H-7	
B-017	928D350O01	○	J-6	
B-024	460C006O10		H-3	
B-029	621C551O10	○	A-2	
B-033	593C817O10	○	H-3	
B-037	621C557O10	○	B-1	
B-041	460P055O50	○	D-3	
B-042	521D096O10	○	H-6	
B-054	641B790O10	○	I-5	
B-055	621C505O10	○	J-5	
B-056	635C104O10		G-4	
B-058	635C108O10	○	G-4	
B-062	641B844O10	○	G-3	
B-063	621C532O10	○	H-2	
B-064	621C498O10		D-7	
B-065	621C529O10		D-6	
B-066	593C923O10		I-5	
B-067	621C486O10		C-6	
B-073	641B788O20	○	C-2	F-
B-078	597D572O10		D-2	
B-079	641B782O10	○	D-8	
B-081	641B800O10	○	E-3	
B-082	641B801O10	○	G-2	
B-083	621C530O10	○	D-1	
B-084	641B785O10	○	J-2	
B-092	593C800O10		F-4	
B-093	593C801O10		I-3	
B-094	592B274O10		A-3	
B-095	592B280O10	○	C-1	
B-099	622D615O10		F-4	
B-101	572D844O10	○	H-3	
B-103	572D858O10	○	D-7	
B-106	572D839O10	○	D-3	G
B-107	572D840O10	○	B-1	
B-109	572D843O10	○	H-7	
B-121	674D081O20	○	H-6	
B-151	515B001O20	○	B-7	
B-152	515C001O30	○	C-7	
B-153	515C001O40	○	D-7	
B-154	621C533O10	○	E-7	
B-201	669D224O10		E-3	I-
B-202	669D285O40		J-4	
B-203	669D224O30		D-2 I-5	D
B-204	669D476O20	○	H-2	D
B-211	552C017O20	○	C-3	F
B-213	552C018O70	○	H-1	
B-214	683D114O04		H-6	
F-011	635B091O10	○	E-3	
F-021	522B061O10		F-2	
F-031	669D506O90		F-3	



* Settled Service Parts

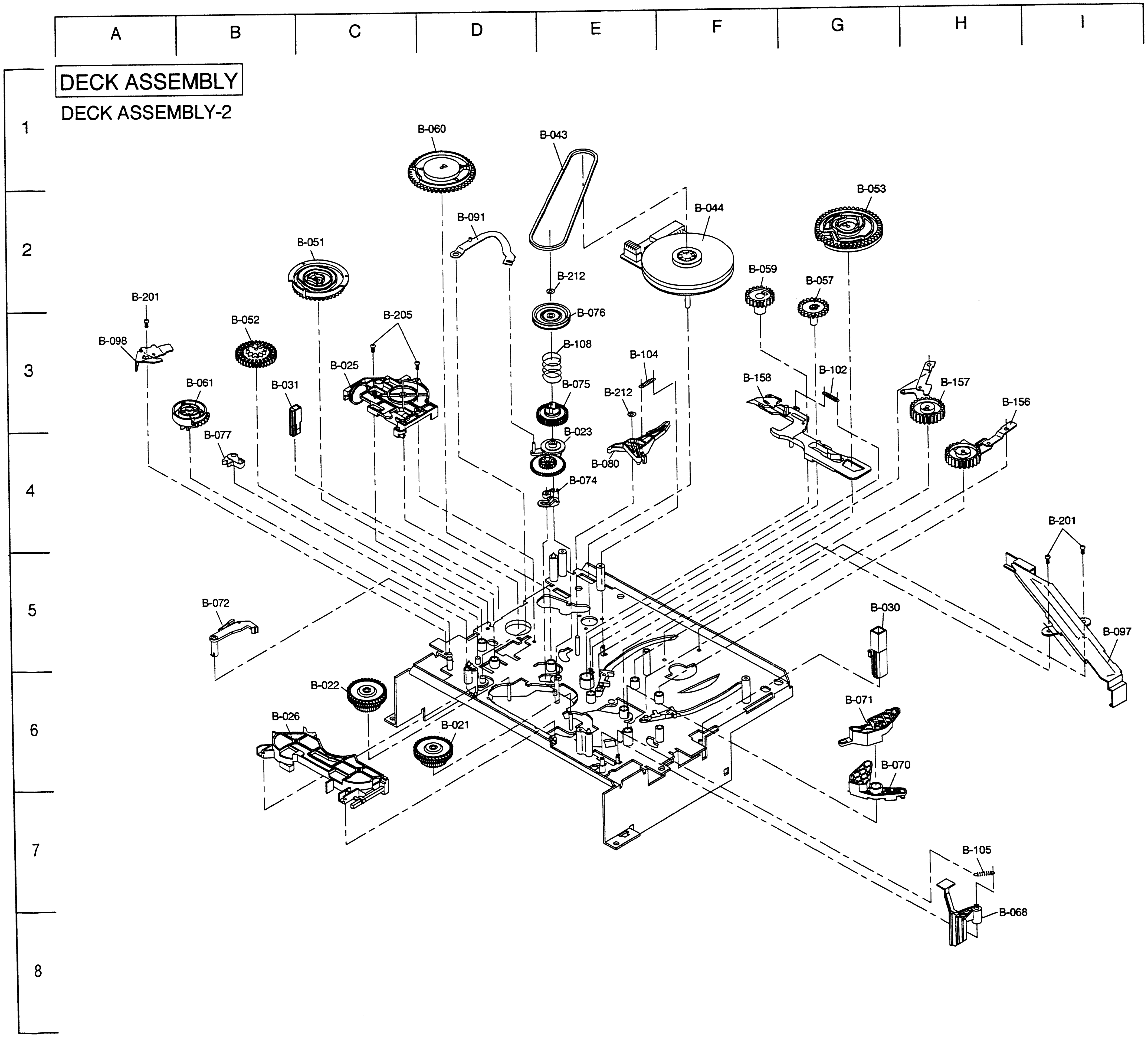
ITEM	PARTS NO.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
B-011	948A194001		F-7		MAIN PLATE ASSY		1
B-012	948C338001	○	C-7		SYNC GEAR ASSY		1
B-014	948D059001	○	E-2		TAPE GUIDE ASSY	TAKE UP	1
B-015	948D060001	○	D-1		TAPE GUIDE ASSY	SUPPLY	1
B-016	948D062001	○	H-7		GUIDE ARM ASSY (TU)		1
B-017	928D350001	○	J-6		LOADING MOTOR ASSY		1
B-024	460C006010		H-3		A/C HEAD UNIT		1
B-029	621C551010	○	A-2		WIND LEVER UNIT		1
B-033	593C817010	○	H-3		PINCH ARM UNIT		1
B-037	621C557010	○	B-1		TENSION BELT UNIT		1
B-041	460P055050	○	D-3		FE HEAD		1
B-042	521D096010	○	H-6		LOADING BELT		1
B-054	641B790010	○	I-5		PINCH CAM GEAR		1
B-055	621C505010	○	J-5		PINCH RACK SLIDER		1
B-056	635C104010		G-4		PINCH CAM LEVER		1
B-058	635C108010	○	G-4		PINCH GEAR ARM 2		1
B-062	641B844010	○	G-3		PINCH ARM CAP 2		1
B-063	621C532010	○	H-2		LOADING TG LEVER		1
B-064	621C498010		D-7		MODE POSITION GUIDE		1
B-065	621C529010		D-6		LOADING LOCK LEVER		1
B-066	593C923010		I-5		PINCH CAM HOLDER		1
B-067	621C486010		C-6		LAMP GUIDE		1
B-073	641B788020	○	C-2	F-3	REEL DISK		2
B-078	597D572010		D-2		LID HOLDER PLATE		1
B-079	641B782010	○	D-8		F/L DOOR ARM		1
B-081	641B800010	○	E-3		MAIN BRAKE	SUPPLY	1
B-082	641B801010	○	G-2		MAIN BRAKE	TAKE UP	1
B-083	621C530010	○	D-1		GUIDE ARM	SUPPLY	1
B-084	641B785010	○	J-2		CLEANING ARM		1
B-092	593C800010		F-4		GUIDE CATCHER (SP)		1
B-093	593C801010		I-3		GUIDE CATCHER (TU)		1
B-094	592B274010		A-3		STAY PLATE		1
B-095	592B280010	○	C-1		TENSION ARM		1
B-099	622D615010		F-4		SNAP PIN		1
B-101	572D844010	○	H-3		PINCH CAM SPRING		1
B-103	572D858010	○	D-7		LOADING LOCK SPRING		1
B-106	572D839010	○	D-3	G-2	BRAKE SPRING		2
B-107	572D840010	○	B-1		TENSION SPRING		1
B-109	572D843010	○	H-7		GUIDE SPRING (TU)		1
B-121	674D081020	○	H-6		NYLON NUT		1
B-151	515B001020	○	B-7		BOTTOM UNIT		1
B-152	515C001030	○	C-7		F/L ARM UNIT	SUPPLY	1
B-153	515C001040	○	D-7		F/L ARM UNIT	TAKE UP	1
B-154	621C533010	○	E-7		SHUT LEVER UNIT		1
B-201	669D224010		E-3	I-2	SCREW	2.6 × 6	4
B-202	669D285040		J-4		SCREW	M2.6 × 8	3
B-203	669D224030		D-2 I-5	D-3	SCREW	2.6 × 10	3
B-204	669D476020	○	H-2	D-6	SCREW	2.6 × 8	3
B-211	552C017020	○	C-3	F-3	THRUST WASHER	2.5 × 4.7 × 0.13	6
B-213	552C018070	○	H-1		CUT WASHER	2.1 × 5.0 × 0.5	1
B-214	683D114004		H-6		SL WASHER	3.2 × 6.0 × 0.5	1
F-011	635B091010	○	E-3		TAPE GUIDE	TAKE UP	1
F-021	522B061010		F-2		GUIDE ROLLER (TU)		1
F-031	669D506090		F-3		SCREW	M2 × 0.4 L=4	1

* Settled Service Parts

ITEM	PARTS NO.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
G-011	635B092010	○	C-1		TAPE GUIDE (SP)	SUPPLY	1
G-021	522B061010	○	C-1		GUIDE ROLLER (SP)		1
G-031	669D506090		D-1		SCREW	M2 × 0.4 L=4	1
Q-025	288P158020	○	E-1		DRUM MOTOR	E20EL63	1
T-021	948B392020	○	E-1		DRUM ASSY		1
T-026	592B345010		G-2		DRUM CLAMPER		1
T-028	669D224010		F-2	G-1	SCREW	2.6 × 6	2
T-029	622D598010	○	I-2		CLEANING ROLLER UNIT		1

DECK ASSEMBLY

DECK ASSEMBLY-2


A
B
C
D
E
F
G
H
I
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2
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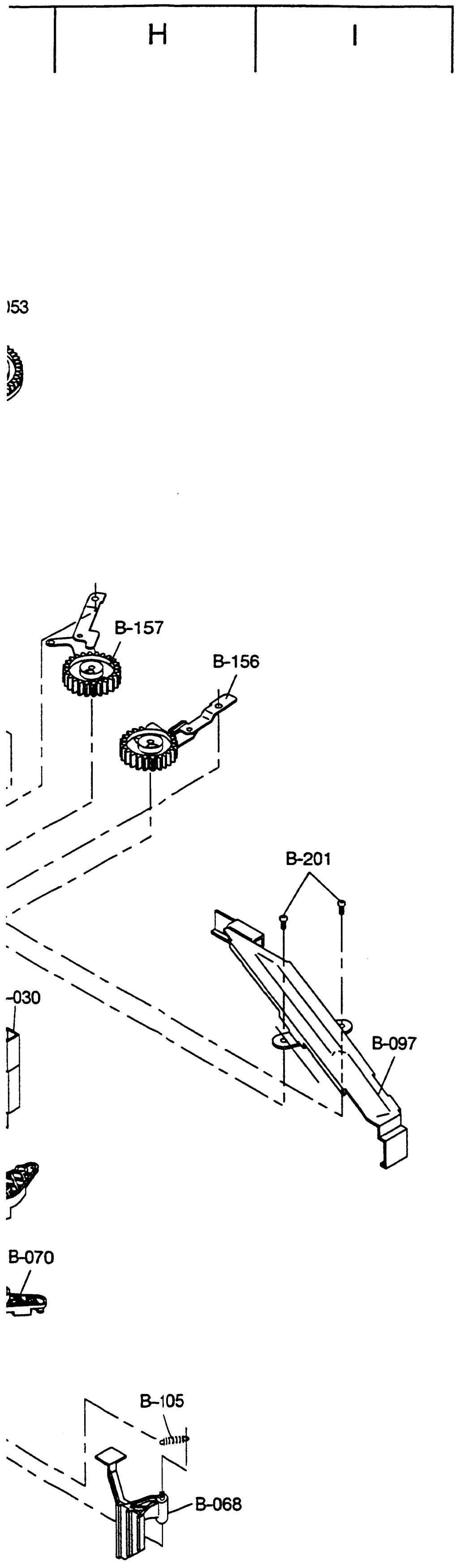
4
5
6
7
8
B-060
B-043
B-044
B-053
B-091
B-051
B-212
B-076
B-059
B-057
B-201
B-052
B-205
B-108
B-098
B-025
B-075
B-104
B-158
B-102
B-157
B-061
B-031
B-212
B-156
B-077
B-023
B-080
B-074
B-201
B-072
B-030
B-097
B-022
B-026
B-021
B-071
B-070
B-105
B-068

* Settled Service Parts

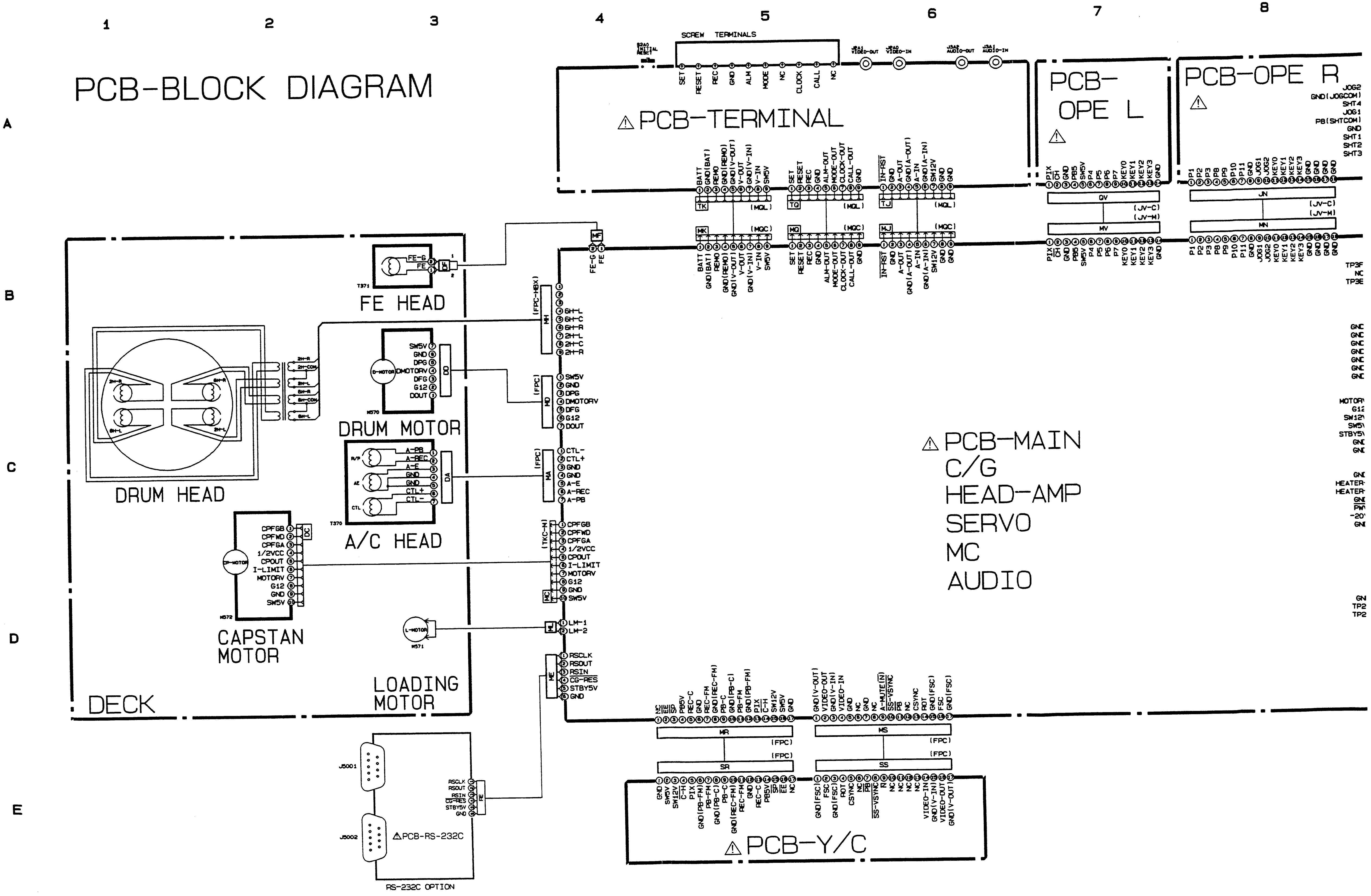
ITEM	PARTS NO.	*	ADDRESS	
B-021	641B805050	○	D-6	
B-022	641B805060	○	C-6	
B-023	621C536010	○	E-4	
B-025	621C538010	○	C-3	
B-026	641B827010	○	B-6	
B-030	622D585010	○	G-5	
B-031	622D586010	○	B-3	
B-043	521D097010	○	E-1	
B-044	288P180010	○	F-2	
B-051	641B794010	○	C-2	
B-052	621C504010		B-3	
B-053	641B791020	○	G-2	
B-057	621C503020		G-2	
B-059	621C502010		F-2	
B-060	641B792010	○	D-1	
B-061	641B793010		B-3	
B-068	641B817010	○	H-8	
B-070	641B838020	○	G-6	
B-071	621C508010	○	G-6	
B-072	621C506010	○	B-5	
B-074	621C494010	○	E-4	
B-075	621C493010		E-3	
B-076	621C492010	○	E-3	
B-077	635C106010		B-4	
B-080	641B819010		E-4	
B-091	593C799010		D-2	
B-097	592B365010		I-5	
B-098	593C903010		A-3	
B-102	572D835010	○	G-3	
B-104	572D842010	○	E-3	
B-105	572D870010	○	H-7	
B-108	572D865010	○	E-3	
B-156	593C825020	○	H-3	
B-157	593C826020	○	H-3	
B-158	621C537010	○	F-3	
B-201	669D224010		A-2	I-
B-205	669D224050		C-3	
B-212	552C018010	○	E-2	E-



∗ Settled Service Parts

ITEM	PARTS NO.	∗	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
B-021	641B805050	○	D-6		REEL GEAR UNIT	SUPPLY	1
B-022	641B805060	○	C-6		REEL GEAR UNIT	TAKE UP	1
B-023	621C536010	○	E-4		IDLER UNIT		1
B-025	621C538010	○	C-3		WORM PULLEY UNIT		1
B-026	641B827010	○	B-6		PHOTO UNIT		1
B-030	622D585010	○	G-5		PHOTO GUIDE UNIT	SUPPLY	1
B-031	622D586010	○	B-3		PHOTO GUIDE UNIT	TAKE UP	1
B-043	521D097010	○	E-1		REEL BELT		1
B-044	288P180010	○	F-2		CAPSTAN MOTOR	F2QKB26	1
B-051	641B794010	○	C-2		MODE GEAR		1
B-052	621C504010		B-3		LOADING WORM GEAR		1
B-053	641B791020	○	G-2		CAM GEAR	SUPPLY	1
B-057	621C503020		G-2		LOADING GEAR		1
B-059	621C502010		F-2		LAMP LOADING GEAR		1
B-060	641B792010	○	D-1		CAM GEAR	TAKE UP	1
B-061	641B793010		B-3		F/L DRIVE GEAR		1
B-068	641B817010	○	H-8		REC LEVER		1
B-070	641B838020	○	G-6		TENSION LEVER UNIT		1
B-071	621C508010	○	G-6		CONTROL WIND LEVER		1
B-072	621C506010	○	B-5		REEL LOCK LEVER		1
B-074	621C494010	○	E-4		SHIFT LEVER		1
B-075	621C493010		E-3		PULLEY GEAR		1
B-076	621C492010	○	E-3		BELT PULLEY		1
B-077	635C106010		B-4		F/L DRIVE LEVER		1
B-080	641B819010		E-4		CAPSTAN BRAKE		1
B-091	593C799010		D-2		IDLER CENTER LEVER		1
B-097	592B365010		I-5		MAIN PLATE SUPPORT		1
B-098	593C903010		A-3		MODE HOLDER		1
B-102	572D835010	○	G-3		CAM SPRING (C)		1
B-104	572D842010	○	E-3		CAPSTAN BRAKE SPRING		1
B-105	572D870010	○	H-7		REC SPRING		1
B-108	572D865010	○	E-3		SHIFT SPRING		1
B-156	593C825020	○	H-3		LOADING ARM UNIT	SUPPLY	1
B-157	593C826020	○	H-3		LOADING ARM UNIT	TAKE UP	1
B-158	621C537010	○	F-3		CAM PLATE UNIT (C)		1
B-201	669D224010		A-2	I-4	SCREW	2.6 × 6	3
B-205	669D224050		C-3		SCREW	2.6 × 14	2
B-212	552C018010	○	E-2	E-3	CUT WASHER	2.5 × 6.0 × 0.5	2

PCB-BLOCK DIAGRAM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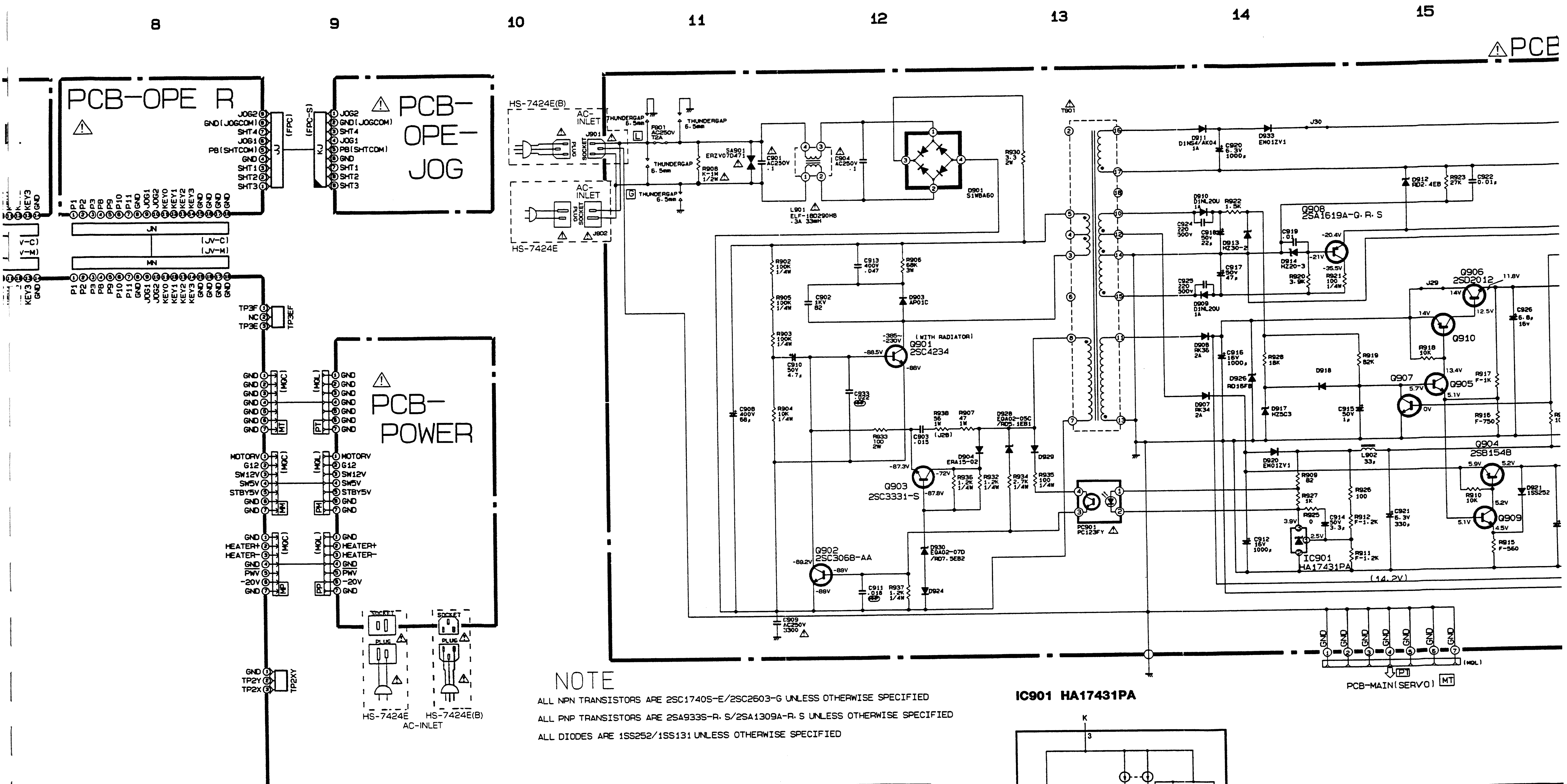
2
3
4
5
6
7
8
A
B
C
D
E
SCREW TERMINALS
SET
RESET
REC
GND
ALM
MODE
NC
CLOCK
CALL
NC
VIDEO-OUT
VIDEO-IN
AUDIO-OUT
AUDIO-IN
⚠PCB-TERMINAL
PCB-OPE L
⚠
PCB-OPE R
⚠
JOG2
GND(JOGCOM)
SHT4
JOG1
P8(SHTCOM)
GND
SHT1
SHT2
SHT3
BATT
GND(BATT)
REMO
GND(REMO)
GND(V-OUT)
V-OUT
GND(V-IN)
V-IN
SW5V
TK
(MQL)
MK
(MQC)
SET
RESET
REC
GND
ALM-OUT
MODE-OUT
CLOCK-OUT
CALL-OUT
GND
TQ
MQ
IN-RST
GND
A-OUT
GND(A-OUT)
A-IN
GND(A-IN)
SW12V
GND
GND
TJ
MJ
PIX
CH
GND
PB5
SW5V
P4
P5
P6
P7
KEY0
KEY1
KEY2
KEY3
GND
QV
MV
(JV-C)
(JV-M)
P1
P2
P3
P8
P9
P10
P11
GND
JOG1
JOG2
KEY0
KEY1
KEY2
KEY3
GND
JN
MN
TP3F
NC
TP3E
MF
FE-G
FE
FE-G
FE
DF
T371
FE HEAD
(FPC-HBX)
MH
6H-L
6H-C
6H-R
2H-L
2H-C
2H-R
2H-R
2H-COM
2H-L
6H-R
6H-COM
6H-L
DRUM HEAD
SW5V
GND
DPG
DMOTORV
DFG
G12
DOUT
D-MOTOR
DD
M570
DRUM MOTOR
(FPC)
MD
CTL-
CTL+
GND
GND
A-E
A-REC
A-PB
R/P
AE
CTL
DA
MA
T370
A/C HEAD
CPFGB
CPFWD
CPFGA
1/2VCC
CPOUT
I-LIMIT
MOTORV
G12
GND
SW5V
CP-MOTOR
DC
M572
CAPSTAN MOTOR
(TKC-N)
MC
L-MOTOR
M571
LM-1
LM-2
ML
LOADING MOTOR
DECK
RSCLK
RSOUT
RSIN
CG-RES
STBY5V
GND
ME
RE
J5001
J5002
⚠PCB-RS-232C
RS-232C OPTION
⚠PCB-MAIN
C/G
HEAD-AMP
SERVO
MC
AUDIO
GND
MOTORV
G12
SW12V
SW5V
STBY5V
HEATER
PW
-20V
TP2
NC
EE
SP
PB5V
REC-C
GND
REC-FM
GND(REC-FM)
GND(PB-C)
PB-C
PB-FM
GND(PB-FM)
PIX
C-H
SW12V
SW5V
GND
MR
SR
(FPC)
GND(V-OUT)
VIDEO-OUT
GND(V-IN)
VIDEO-IN
GND
NC
GND
NC
A-MUTE(N)
SS-VSYNC
PB
NC
CSYNC
ROT
GND(FSC)
FSC
GND(FSC)
MS
SS
⚠PCB-Y/C


8
9
10
11
12
13
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15
⚠PCB
PCB-OPE R
⚠ PCB-OPE-JOG
⚠ PCB-POWER
JOG2
GND(JOGCOM)
SHT4
JOG1
PB(SHTCOM)
GND
SHT1
SHT2
SHT3
(FPC)
(FPC-S)
JJ
KJ
JN
MN
(JV-C)
(JV-M)
TP3F
NC
TP3E
TP3EF
MOTORV
G12
SW12V
SW5V
STBY5V
HEATER+
HEATER−
PWV
−20V
TP2Y
TP2X
TP2XY
HS-7424E(B)
HS-7424E
AC-INLET
SOCKET
PLUG
J901
J902
THUNDERGAP 6.5mm
F901 AC250V T2A
SA901 ERZV07D471
R908
C901 AC250V
L901 ELF-18D290H8
C904 AC250V
D901 S1WBA60
R930 3.3 2W
T901
R902 100K 1/4W
C913 400V .047
R906 68K 3W
R905 100K 1/4W
C902 1KV 82
D903 AP01C
R903 100K 1/4W
C910 50V 4.7μ
Q901 2SC4234 (WITH RADIATOR)
C908 400V 68μ
R904 10K 1/4W
C933
R933 100 2W
R938 56 1W
R907 47 1W
C903 .015
D928 EGA02-05C /RD5.1EB1
D904 ERA15-02
D929
Q903 2SC3331-S
R936 1.2K 1/4W
R932 1.2K 1/4W
R934 2.7K 1/4W
R935 100 1/4W
Q902 2SC3068-AA
D930 EGA02-07D /RD7.5EB2
C911 .018
R937 1.2K 1/4W
D924
C909 AC250V 3300
PC901 PC123FY
D911 D1NS4/AK04
C920 6.3V 1000μ
D933 EM01ZV1
J30
D910 D1NL20U
R922 1.5K
C924 220 500V
C918 50V 22μ
D913 HZ30-2
Q908 2SA1619A-Q,R,S
C919 .01
D914 HZ20-3
R920 3.9K
R921 100 1/4W
C917 50V 47μ
C925 220 500V
D909 D1NL20U
D912 RD2.4EB
R923 27K
C922 0.01μ
J29
Q906 2SD2012
C926 6.8μ 16V
Q910
R918 10K
D908 RK36
C916 16V 1000μ
R928 18K
R919 82K
D926 RD16FB
D918
Q907
Q905
R917 F-1K
D907 RK34
D917 HZ5C3
C915 50V 1μ
R916 F-750
Q904 2SB1548
D920 EM01ZV1
L902 33μ
R909 82
R927 1K
R925 0
R926 100
C914 50V 3.3μ
R912 F-1.2K
C921 6.3V 330μ
R910 10K
D921 1SS252
Q909
R915 F-560
C912 16V 1000μ
IC901 HA17431PA
R911 F-1.2K
(14.2V)
GND
(MQL)
PCB-MAIN(SERVO) PT MT

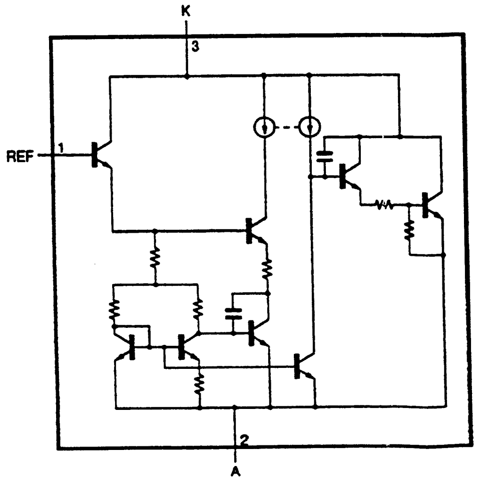
NOTE

ALL NPN TRANSISTORS ARE 2SC1740S-E/2SC2603-G UNLESS OTHERWISE SPECIFIED

ALL PNP TRANSISTORS ARE 2SA933S-R, S/2SA1309A-R, S UNLESS OTHERWISE SPECIFIED

ALL DIODES ARE 1SS252/1SS131 UNLESS OTHERWISE SPECIFIED

IC901 HA17431PA

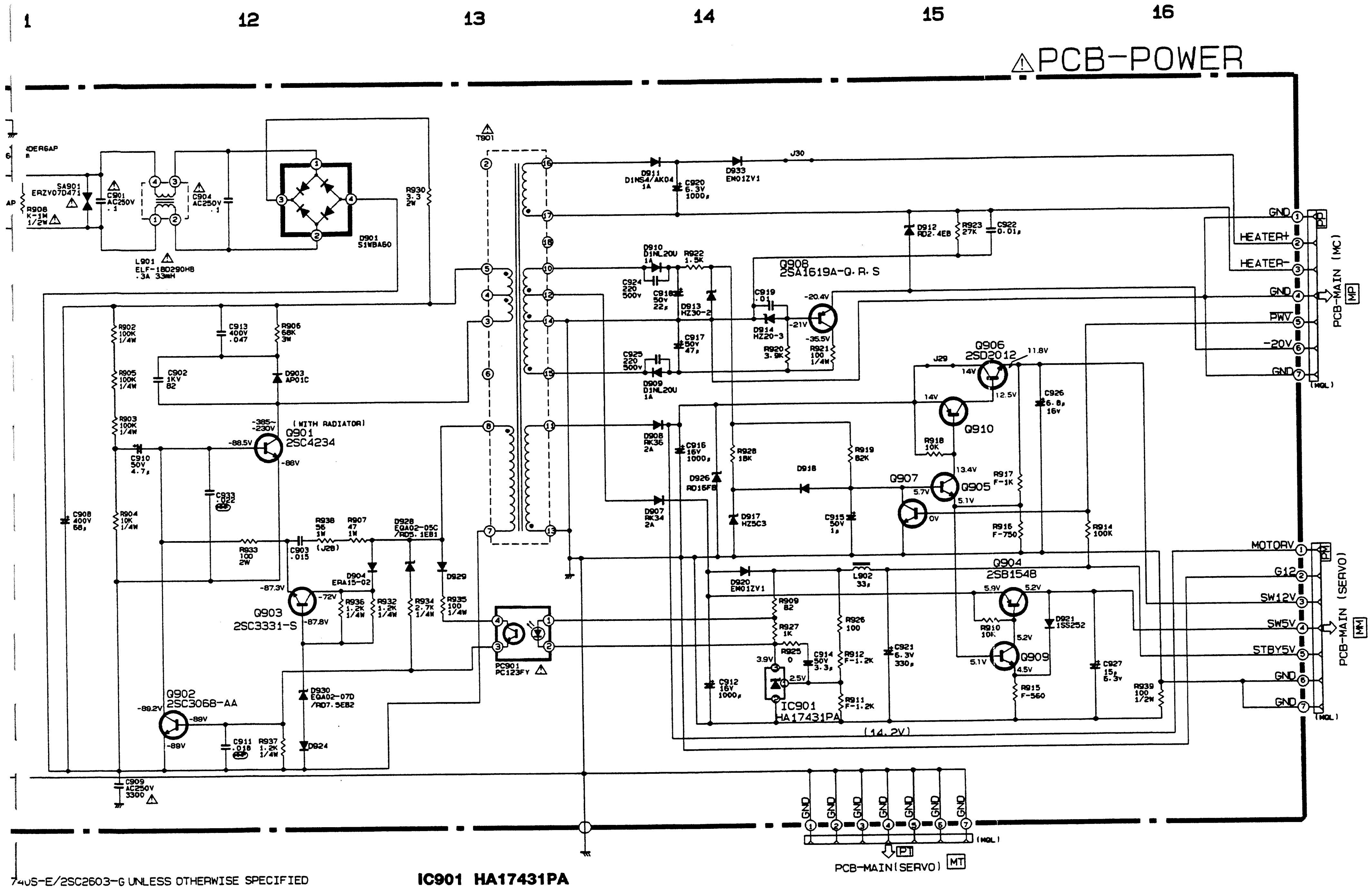


CONTENTS			
①	PCB-BLOCK DIAGRAM PCB-POWER	④	PCB-MAIN (MC)
②	PCB-MAIN (HEAD-AMP) (AUDIO) PCB-TERMINAL	⑤	PCB-MAIN (SERVO) (C/G) PCB-OPE L PCB-OPE R PCB-OPE-JOG
③	PCB-Y/C	⑥ ∫ ⑧	PRINTED CIRCUIT BOARD PARTS LAYOUT

⚠

SERVICING PRECAUTION

SYMBOLS INDICATE COMPONE
CHARACTERISTICS IMPORTANT T
FORMANCE. THEREFOR REPLACE
TY PARTS SHOULD BE IDENTICAL
ACTERISTICS.
DON'T DEGRADE THE SAFETY O
IMPROPER SERVICING.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12
13
14
15
16
⚠PCB-POWER
DERGAP
SA901
ERZV07D471
R908
K-1M
1/2W ⚠
C901 ⚠
AC250V
.1
C904 ⚠
AC250V
.1
L901 ⚠
ELF-18D290HB
.3A 33mH
D901
S1WBA60
R930
3.3
2W
T901 ⚠
R902
100K
1/4W
C913
400V
.047
R906
68K
3W
R905
100K
1/4W
C902
1KV
82
D903
AP01C
R903
100K
1/4W
-385~
-230V
(WITH RADIATOR)
Q901
2SC4234
-88.5V
-88V
C910
50V
4.7µ
C933
.022
C908
400V
68µ
R904
10K
1/4W
R933
100
2W
C903
.015
R938
56
1W
(J28)
R907
47
1W
D928
EQA02-05C
/RD5.1EB1
D904
ERA15-02
D929
-87.3V
-72V
Q903
2SC3331-S
-87.8V
R936
1.2K
1/4W
R932
1.2K
1/4W
R934
2.7K
1/4W
R935
100
1/4W
PC901
PC123FY ⚠
Q902
2SC3068-AA
-89.2V
-89V
-89V
C911
.018
R937
1.2K
1/4W
D930
EQA02-07D
/RD7.5EB2
D924
C909
AC250V
3300 ⚠
D911
D1NS4/AK04
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C920
6.3V
1000µ
D933
EM01ZV1
J30
D912
RD2.4EB
R923
27K
C922
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D910
D1NL20U
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R922
1.5K
C924
220
500V
C918
50V
22µ
D913
HZ30-2
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C919
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-20.4V
-21V
-35.5V
D914
HZ20-3
R920
3.9K
R921
100
1/4W
C917
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47µ
C925
220
500V
D909
D1NL20U
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Q906
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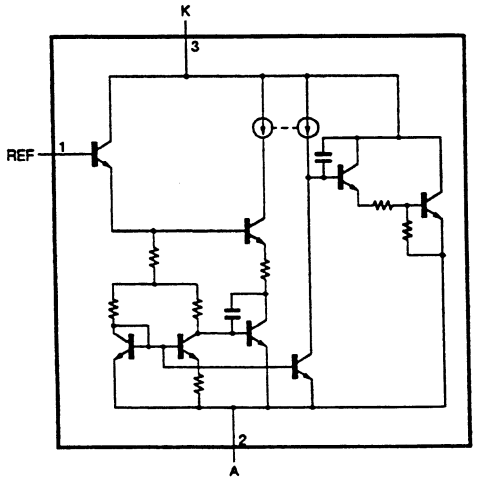
J29
14V
11.8V
12.5V
C926
6.8µ
16V
14V
Q910
R918
10K
D908
RK36
2A
C916
16V
1000µ
R928
18K
R919
82K
D926
RD16FB
D918
Q907
13.4V
5.7V
Q905
5.1V
R917
F-1K
0V
D907
RK34
2A
D917
HZ5C3
C915
50V
1µ
R916
F-750
R914
100K
D920
EM01ZV1
L902
33µ
Q904
2SB1548
5.9V
5.2V
R909
82
R927
1K
R926
100
R910
10K
5.2V
D921
1SS252
R925
0
3.9V
2.5V
C914
50V
3.3µ
R912
F-1.2K
C921
6.3V
330µ
5.1V
Q909
4.5V
C927
15µ
6.3V
R939
100
1/2W
C912
16V
1000µ
IC901
HA17431PA
R911
F-1.2K
R915
F-560
(14.2V)
GND ①
HEATER+ ②
HEATER- ③
GND ④
PWV ⑤
-20V ⑥
GND ⑦
(MQL)
PCB-MAIN (MC)
MP
PP
MOTORV ①
G12 ②
SW12V ③
SW5V ④
STBY5V ⑤
GND ⑥
GND ⑦
(MQL)
PCB-MAIN (SERVO)
MM
PM
GND ①
GND ②
GND ③
GND ④
GND ⑤
GND ⑥
GND ⑦
(MQL)
PT
PCB-MAIN(SERVO)
MT

74US-E/2SC2603-G UNLESS OTHERWISE SPECIFIED

33S-R.S/2SA1309A-R.S UNLESS OTHERWISE SPECIFIED

LESS OTHERWISE SPECIFIED

IC901 HA17431PA



	④	PCB-MAIN (MC)
PAM	⑤	PCB-MAIN (SERVO) (C/G) PCB-OPE L PCB-OPE R PCB-OPE-JOG
	⑥ ⑧	PRINTED CIRCUIT BOARD PARTS LAYOUT

⚠

SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THEREFOR REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS.

DON'T DEGRADE THE SAFETY OF THE VCR THROUGH IMPROPER SERVICING.

SCHEMATIC DIAGRAM

• NOTE

1. Each voltage should be within ±20% of the DC voltages measured with a digital voltmeter.
2. The voltages parenthesised are on SP recording mode. While those without parenthesised on SP play back mode.
3. Waveforme were taken with standard color bar signal.
4. TP6A, etc. show Test Points.

5. Capacitors

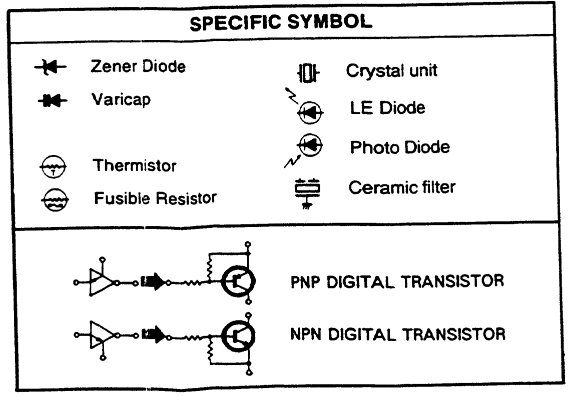
Value	Not indicated		PF, for numbers more than 1 µF, for numbers less than 1
Dielectric Strength	Not indicated :50V		
Tolerance	Not indicated =±10%		No Tolerance is indicated for electrolytic capacitors and ±20%
	G=±2% J=±5% K=±10% M=±20%	P=+100% −0% Z=+80% −20%	Q=+30% −10% T=+200% −0% C=±0.25PF D=±0.5PF F=±1PF G=±2PF
Sort	I	Parts except for chips	Not indicated : Ceramic capacitor MF : Polyester capacitor PP : Polypropylene film capacitor ALM : Aluminus electrolytic capacitor TF : Twin film capacitor SC : Semiconductor ceramic capacitor MP : Metalized paper MPP : Metalized plastic film capacitor MMF : Metalized polyester capacitor MF.PP : Polyester polypropylene film capacitor PS : Styrol capacitor TAN or TANT : Tantalum capacitor —╫— : Electrolytic capacitor BP or NP : Non polarized electrolytic capacitor
	II	Chips	Not indicated : Ceramic capacitor chip —╫— : Electrolytic capacitor BP or NP : Non polarized electrolytic capacitor chip
Characteristic (only ceramic capacitor)	Not indicated : F or B(high dielectric percentage) CH,SL,etc. : Temperature compensating types		

6. Resistors

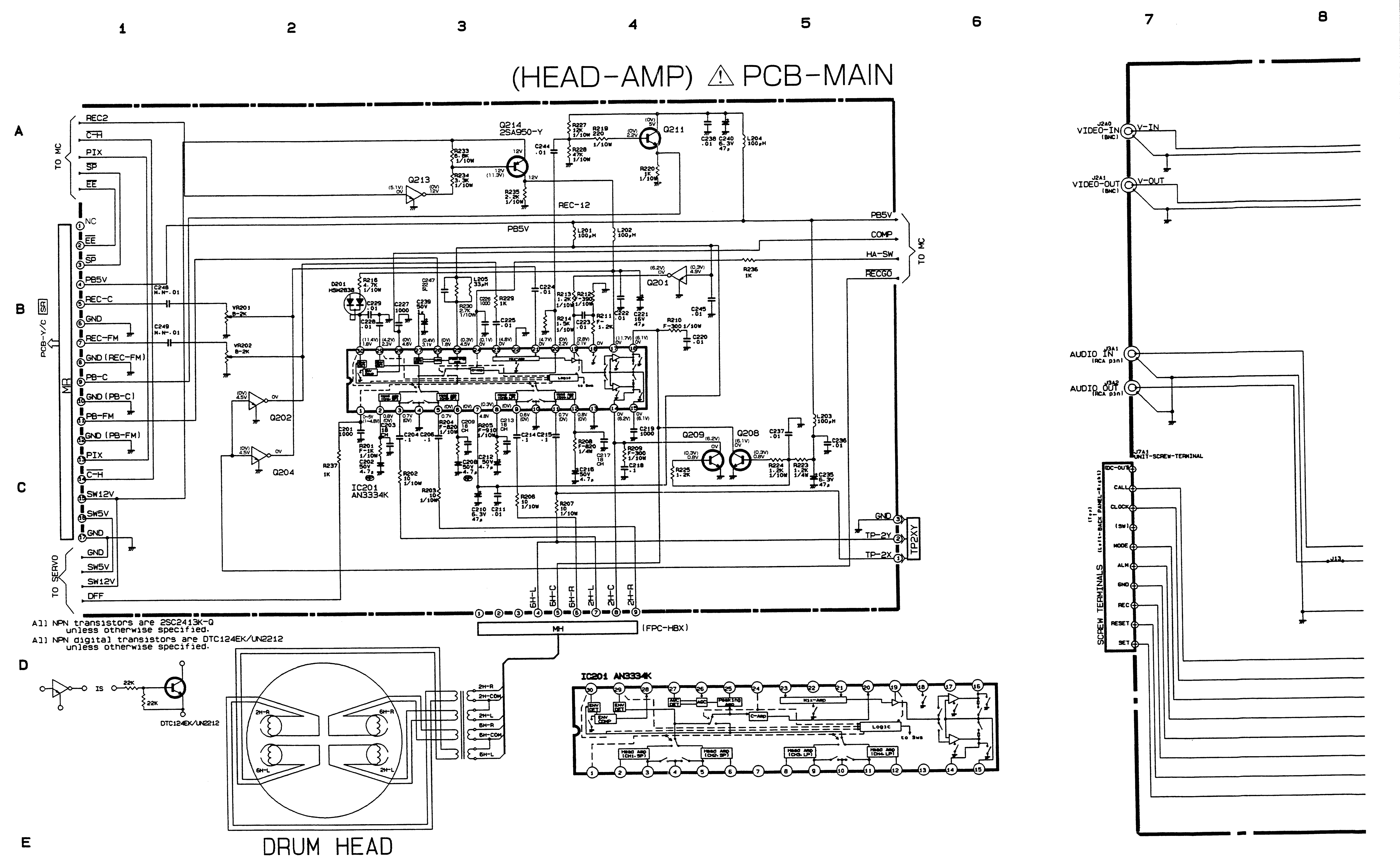
Value	Not indicated = Ω K = kΩ(1000Ω) M = MΩ(1000kΩ)		
Wattage	Parts except for chips		Not indicated = 1/4W or 1/6W
	Chips		Not indicated = 1/10W
Tolerance	Not indicated =±5% D=±0.5% J=±5% F=±1% K=±10%		
Sort	I	Parts except for chips	Not indicated : Carbon resistor S : Fixed composition resistor MB : Metal oxide film resistor(type B) CE : Cemented resistor W : Wire wound resistor M : Metal film resistor MPC : Metal plate cement resistor ML : Metal liner resistor
	II	Chip	Not indicated : Chip resistor

7. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

SPECIFIC SYMBOL


Zener Diode
Varicap
Thermistor
Fusible Resistor
Crystal unit
LE Diode
Photo Diode
Ceramic filter
PNP DIGITAL TRANSISTOR
NPN DIGITAL TRANSISTOR

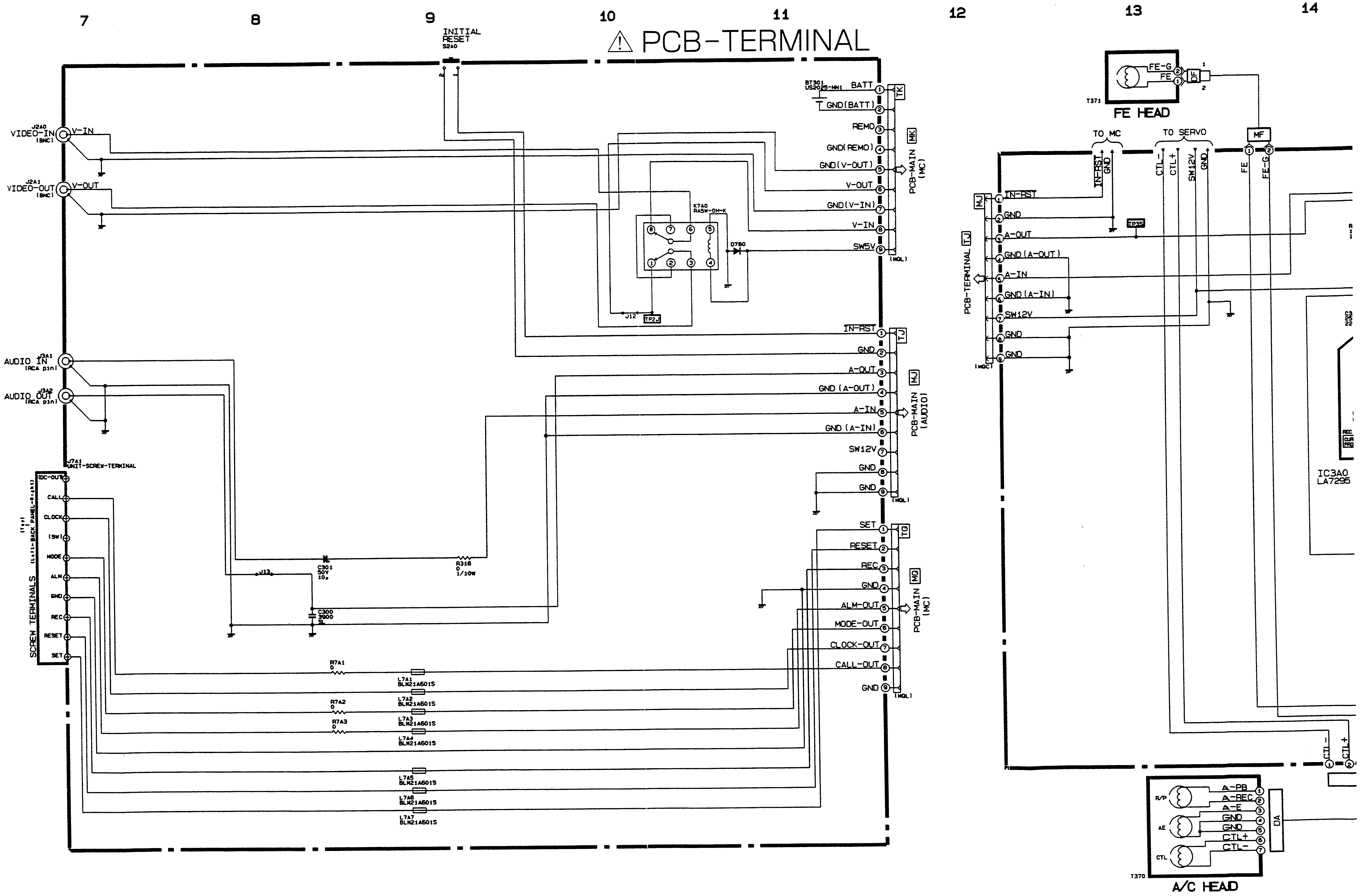
HS-7424E
HS-7424E(B)


(HEAD-AMP) ⚠ PCB-MAIN
1
2
3
4
5
6
7
8
A
B
C
D
E
TO MC
REC2
C-H
PIX
SP
EE
NC
PB5V
REC-C
GND
REC-FM
GND (REC-FM)
PB-C
GND (PB-C)
PB-FM
GND (PB-FM)
SW12V
SW5V
DFF
MR
SR
PCB-Y/C
TO SERVO
Q214
2SA950-Y
Q213
Q211
Q201
Q202
Q204
Q209
Q208
D201
HSK2838
IC201
AN3334K
REC-12
PB5V
COMP
HA-SW
RECGO
TO MC
VR201
B-2K
VR202
B-2K
L201
100μH
L202
100μH
L203
100μH
L204
100μH
L205
33μH
GND
TP-2Y
TP-2X
TP2XY
6H-L
6H-C
6H-R
2H-L
2H-C
2H-R
MH
(FPC-HBX)
IS
22K
22K
DTC124EK/UN2212
2H-R
2H-COM
2H-L
6H-R
6H-COM
6H-L
DRUM HEAD
IC201 AN3334K
ENV DET
ENV COMP
AGC DET
AGC
Peaking Amp
Mix-Amp
C-Amp
Logic
to Sws
Head Amp (CH1.SP)
Head Amp (CH2.SP)
Head Amp (CH3.LP)
Head Amp (CH4.LP)
J2A0
VIDEO-IN
(BNC)
V-IN
J2A1
VIDEO-OUT
(BNC)
V-OUT
J3A1
AUDIO IN
(RCA pin)
J3A2
AUDIO OUT
(RCA pin)
J7A1
UNIT-SCREW-TERMINAL
DC-OUT
CALL
CLOCK
(SW)
MODE
ALM
GND
REC
RESET
SET
SCREW TERMINALS
(Top)
(Left-BACK PANEL-Right)
J13

All NPN transistors are 2SC2413K-Q
unless otherwise specified.
All NPN digital transistors are DTC124EK/UN2212
unless otherwise specified.

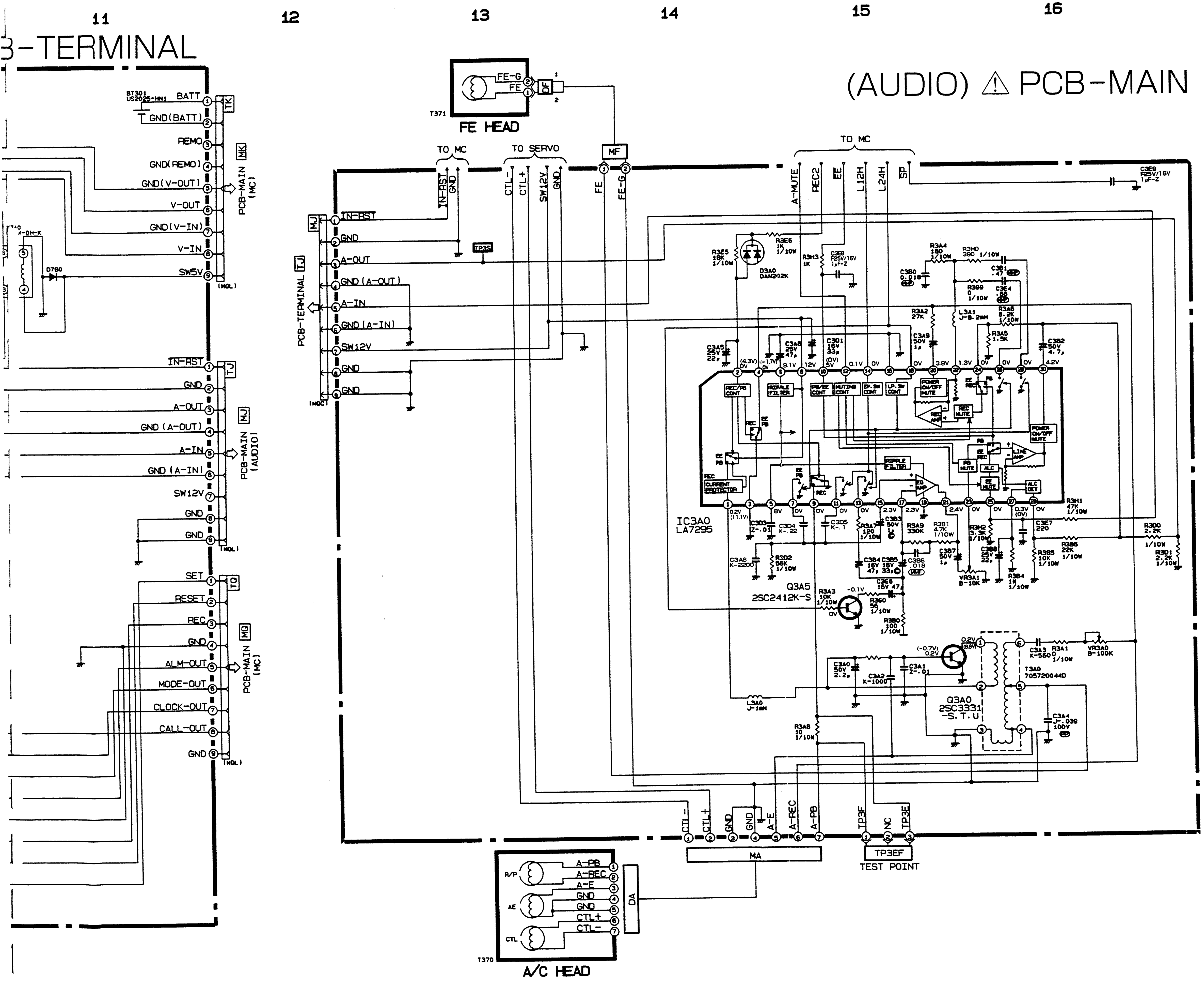
HS-7424E
HS-7424E(B)

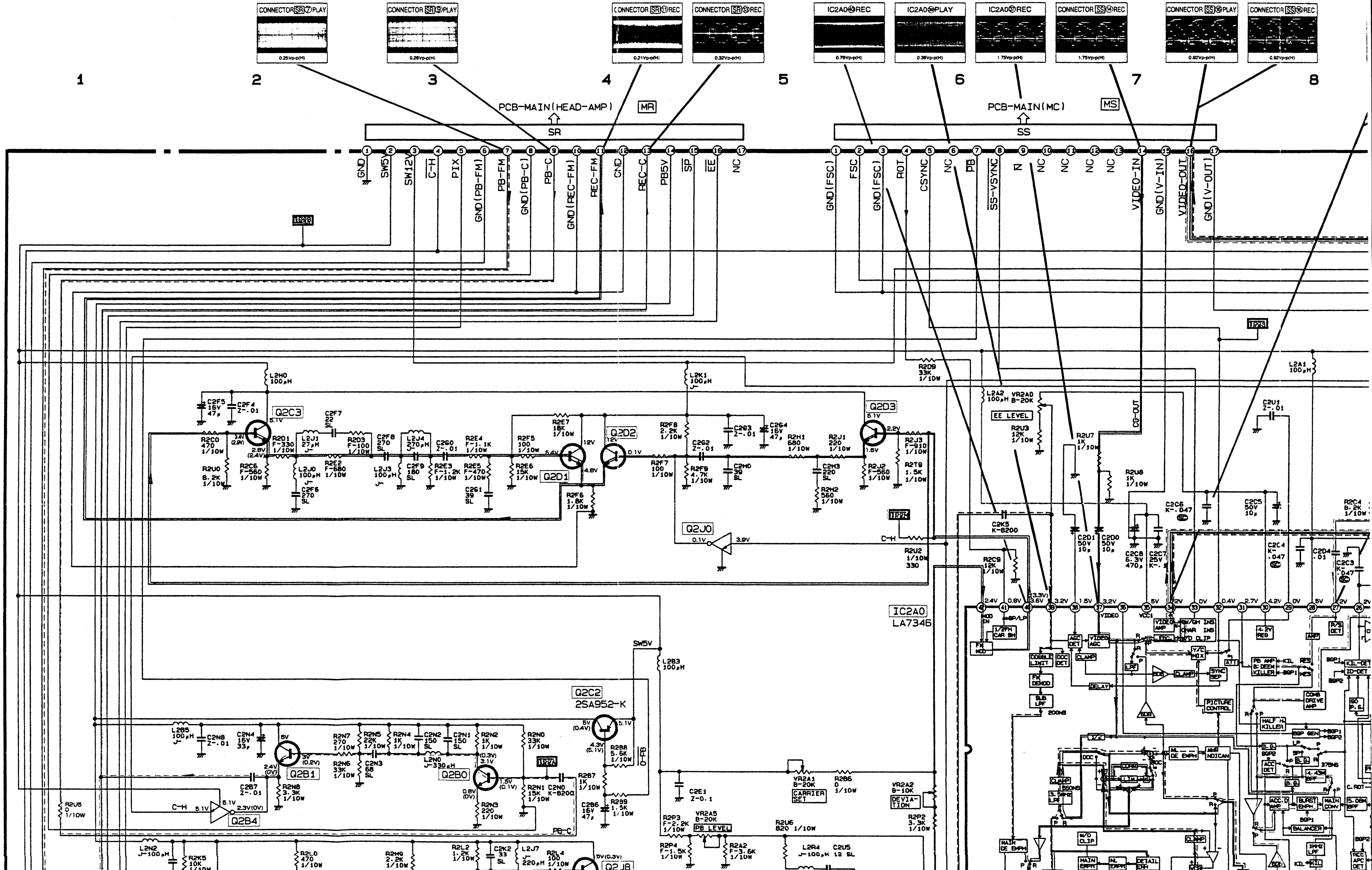
②

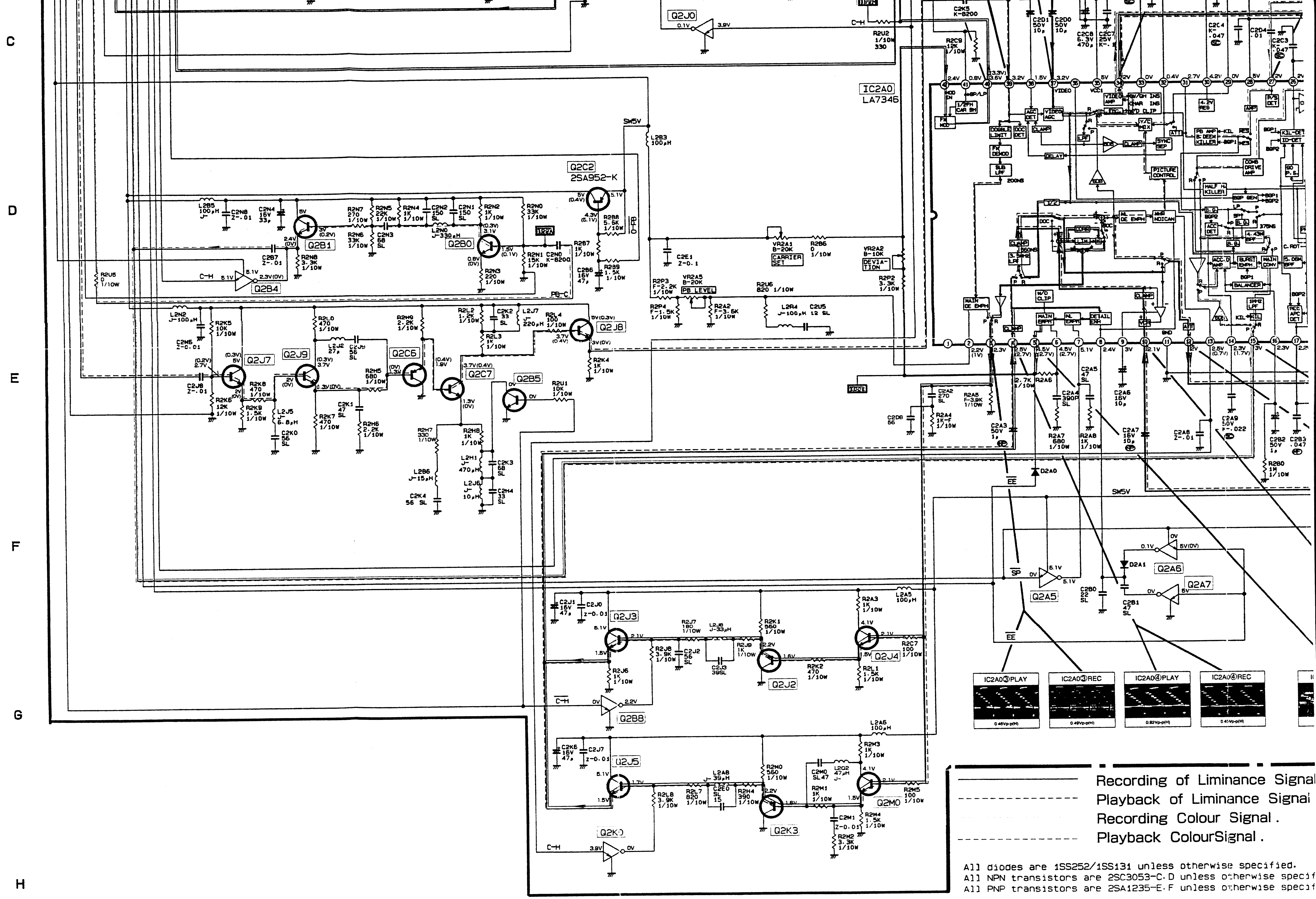

7
8
9
10
11
12
13
14
INITIAL RESET S2A0
⚠ PCB-TERMINAL
BT301 US2025-HN1
BATT
GND(BATT)
REMO
GND(REMO)
GND(V-OUT)
V-OUT
GND(V-IN)
V-IN
SW5V
TK
MK
PCB-MAIN (MC)
(MQL)
K7A0 RA5W-DH-K
D7B0
J12
TP2J
J2A0 VIDEO-IN (BNC)
V-IN
J2A1 VIDEO-OUT (BNC)
V-OUT
J3A1 AUDIO IN (RCA pin)
J3A2 AUDIO OUT (RCA pin)
IN-RST
GND
A-OUT
GND (A-OUT)
A-IN
GND (A-IN)
SW12V
GND
GND
TJ
MJ
PCB-MAIN (AUDIO)
J7A1 UNIT-SCREW-TERMINAL
SCREW TERMINALS
(Top) (Left-BACK PANEL-Right)
IDC-OUT
CALL
CLOCK
(SW)
MODE
ALM
GND
REC
RESET
SET
C301 50V 10μ
R316 0 1/10W
J13
C300 3900 SL
SET
RESET
REC
GND
ALM-OUT
MODE-OUT
CLOCK-OUT
CALL-OUT
GND
TQ
MQ
PCB-MAIN (MC)
R7A1 0
R7A2 0
R7A3 0
L7A1 BLM21A601S
L7A2 BLM21A601S
L7A3 BLM21A601S
L7A4 BLM21A601S
L7A5 BLM21A601S
L7A6 BLM21A601S
L7A7 BLM21A601S
FE-G
FE
DF
T371
FE HEAD
TO MC
TO SERVO
MF
IN-RST
GND
CTL-
CTL+
SW12V
GND
FE
FE-G
MJ
TJ
PCB-TERMINAL
IN-RST
GND
A-OUT
GND (A-OUT)
A-IN
GND (A-IN)
SW12V
GND
GND
(MQC)
TP3S
IC3A0 LA7295
CTL-
CTL+
R/P
AE
CTL
A-PB
A-REC
A-E
GND
GND
CTL+
CTL-
DA
T370
A/C HEAD

B-TERMINAL

(AUDIO) ⚠ PCB-MAIN


11
12
13
14
15
16
BT301
US2025-HN1
BATT
GND(BATT)
REMO
GND(REMO)
GND(V-OUT)
V-OUT
GND(V-IN)
V-IN
SW5V
D780
TK
MK
PCB-MAIN (MC)
(MQL)
IN-RST
GND
A-OUT
GND (A-OUT)
A-IN
GND (A-IN)
SW12V
TJ
MJ
PCB-MAIN (AUDIO)
SET
RESET
REC
ALM-OUT
MODE-OUT
CLOCK-OUT
CALL-OUT
TQ
MQ
PCB-MAIN (MC)
FE-G
FE
DF
T371
FE HEAD
TO MC
TO SERVO
MF
CTL-
CTL+
SW12V
PCB-TERMINAL TJ
(MQC)
TP3S
A-MUTE
REC2
EE
L12H
L24H
SP
C3E9
F25V/16V
1μF-Z
R3E5
18K
1/10W
R3E6
1K
1/10W
D3A0
DAN202K
R3H3
1K
C3E8
F25V/16V
1μF-Z
R3A4
180
1/10W
R3H0
390 1/10W
C3B0
0.018
C381
.47
R389
0
1/10W
C3E4
.56
R3A2
27K
L3A1
J-8.2mH
R3A6
8.2K
1/10W
R3A5
1.5K
C3A5
25V
22μ
C3A6
25V
47μ
C301
16V
33μ
C3A9
50V
1μ
C382
50V
4.7μ
REC/PB CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP. SW CONT
LP. SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
PB MUTE
ALC
EE MUTE
ALC DET
REC CURRENT PROTECTOR
EQ AMP
IC3A0
LA7295
C303
Z-.01
C3D4
K-.22
C3D5
K-.1
R3A7
120
1/10W
C383
50V
R3A9
330K
R381
4.7K
1/10W
R3H2
3.3K
1/10W
C3E7
220
R3H1
47K
1/10W
R3D0
2.2K
1/10W
R3D1
2.2K
1/10W
C3A8
K-2200
R3D2
56K
1/10W
C384
16V
47μ
C385
16V
33μ
C386
.018
C387
50V
1μ
C388
25V
22μ
R385
10K
1/10W
R386
22K
1/10W
VR3A1
B-10K
R3B4
1M
1/10W
Q3A5
2SC2412K-S
R3A3
10K
1/10W
C3E6
16V 47
R360
56
1/10W
R380
100
1/10W
Q3A0
2SC3331
-S.T.U
C3A0
50V
2.2μ
C3A2
K-1000
C3A1
Z-.01
L3A0
J-18H
R3A8
10
1/10W
C3A3
K-5600
R3A1
0
1/10W
VR3A0
B-100K
T3A0
705720044D
C3A4
J-.039
100V
A-E
A-REC
A-PB
TP3F
NC
TP3E
MA
TP3EF
TEST POINT
A-PB
A-REC
A-E
GND
CTL+
CTL-
R/P
AE
CTL
DA
T370
A/C HEAD


CONNECTOR SR⑦PLAY
0.25Vp-p(H)
CONNECTOR SR⑨PLAY
0.26Vp-p(H)
CONNECTOR SR⑪REC
0.21Vp-p(H)
CONNECTOR SR⑬REC
0.32Vp-p(H)
IC2A0㊹REC
0.76Vp-p(H)
IC2A0㊴PLAY
0.36Vp-p(H)
IC2A0㊲REC
1.75Vp-p(H)
CONNECTOR SS⑭REC
1.75Vp-p(H)
CONNECTOR SS⑯PLAY
0.92Vp-p(H)
CONNECTOR SS⑯REC
0.92Vp-p(H)
1
2
3
4
5
6
7
8
A
B
C
D
PCB-MAIN(HEAD-AMP)
MR
SR
PCB-MAIN(MC)
MS
SS
GND
SW5V
SW12V
C-H
PIX
GND(PB-FM)
PB-FM
GND(PB-C)
PB-C
GND(REC-FM)
REC-FM
GND
REC-C
PB5V
SP
EE
NC
GND(FSC)
FSC
GND(FSC)
ROT
CSYNC
NC
PB
SS-VSYNC
N
NC
NC
NC
NC
VIDEO-IN
GND(V-IN)
VIDEO-OUT
GND(V-OUT)
TP2B
TP2S
TP2C
TP2A
Q2C3
Q2D3
Q2D2
Q2D1
Q2J0
Q2C2
2SA952-K
Q2B1
Q2B0
Q2B4
Q2J8
IC2A0
LA7346
EE LEVEL
CARRIER SET
PB LEVEL
DEVIATION
CG-OUT
C-H
SW5V
PB-C
PB-FB


C
D
E
F
G
H
IC2A0
LA7346
Q2J0
Q2C2
2SA952-K
Q2B1
Q2B0
Q2B4
Q2J7
Q2J9
Q2C6
Q2C7
Q2B5
Q2J8
Q2J3
Q2J2
Q2J4
Q2B8
Q2J5
Q2K3
Q2M0
Q2K0
Q2A5
Q2A6
Q2A7
D2A0
D2A1
VR2A1
B-20K
CARRIER SET
VR2A2
B-10K
DEVIA-TION
VR2A5
B-20K
PB LEVEL
SW5V
C-H
EE
SP
PB-C
IC2A0③PLAY
IC2A0③REC
IC2A0④PLAY
IC2A0④REC
0.46Vp-p(H)
0.49Vp-p(H)
0.82Vp-p(H)
0.4Vp-p(H)

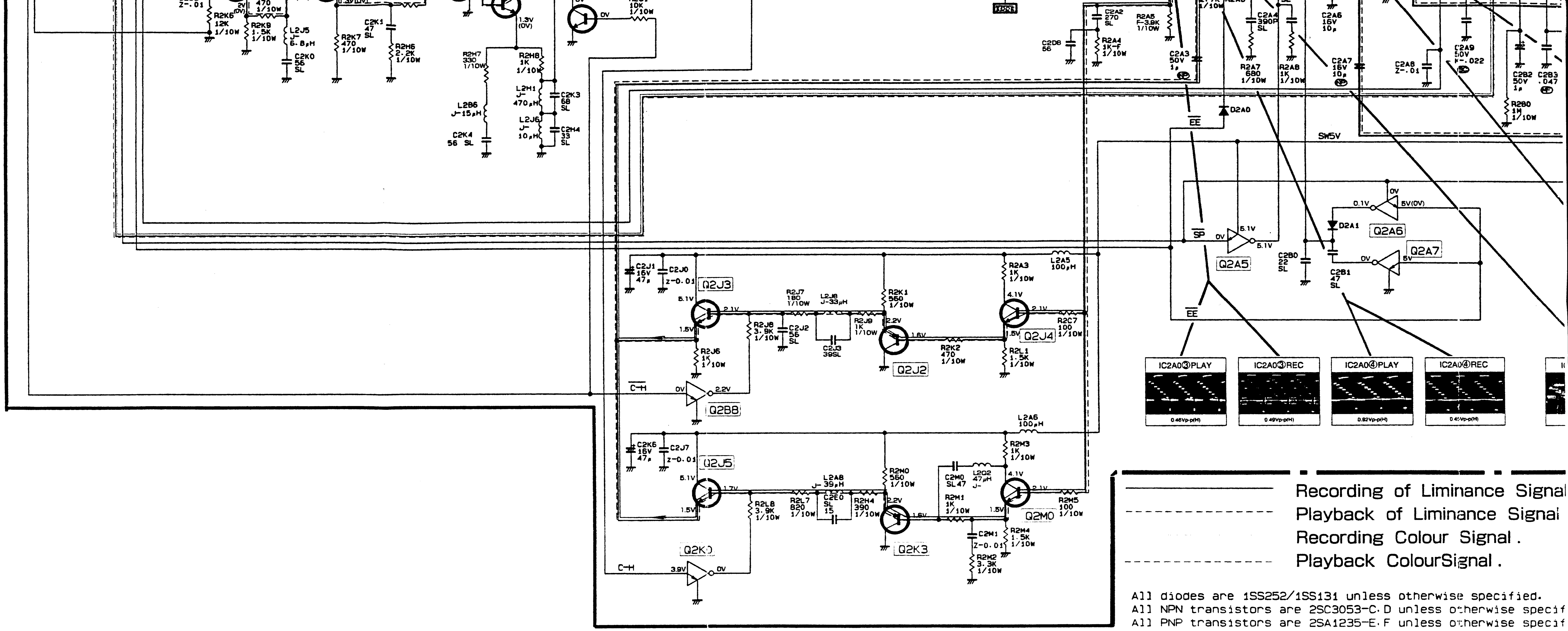
Recording of Liminance Signal

Playback of Liminance Signal

Recording Colour Signal.

Playback ColourSignal.

All diodes are 1SS252/1SS131 unless otherwise specified.
All NPN transistors are 2SC3053-C.D unless otherwise specif
All PNP transistors are 2SA1235-E.F unless otherwise specif


F
G
H
I
J
R2K6 12K 1/10W
R2K9 1.5K 1/10W
L2J5 6.8μH
C2K0 56 SL
R2K7 470 1/10W
C2K1 47 SL
R2H6 2.2K 1/10W
R2H7 330 1/10W
R2H8 1K 1/10W
L2B6 J-15μH
C2K4 56 SL
L2H1 J-470μH
C2K3 68 SL
L2J6 J-10μH
C2H4 33 SL
C2D8 56
C2A2 270 SL
R2A4 1K-F 1/10W
R2A5 F-3.9K 1/10W
C2A3 50V 1μ
C2A4 390P SL
R2A7 680 1/10W
R2A8 1K 1/10W
C2A6 16V 10μ
C2A7 16V 10μ
C2A8 Z-.01
C2A9 50V K-.022
C2B2 50V 1μ
C2B3 .047
R2B0 1M 1/10W
D2A0
EE
SW5V
SP
Q2A5
Q2A6
Q2A7
D2A1
C2B0 22 SL
C2B1 47 SL
5.1V
0.1V
5V(0V)
0V
C2J1 16V 47μ
C2J0 Z-0.01
Q2J3
R2J7 180 1/10W
L2J8 J-33μH
R2K1 560 1/10W
R2A3 1K 1/10W
L2A5 100μH
R2J8 3.9K 1/10W
C2J2 56 SL
C2J3 39SL
R2J9 1K 1/10W
Q2J2
R2K2 470 1/10W
Q2J4
R2C7 100 1/10W
R2L1 1.5K 1/10W
R2J6 1K 1/10W
C-H
Q2B8
2.2V
L2A6 100μH
C2K6 16V 47μ
C2J7 Z-0.01
Q2J5
L2A8 J-39μH
R2M0 560 1/10W
C2M0 SL47
L2Q2 47μH
R2M3 1K 1/10W
R2L8 3.9K 1/10W
R2L7 820 1/10W
C2E0 SL 15
R2H4 390 1/10W
R2M1 1K 1/10W
Q2K3
Q2M0
R2M5 100 1/10W
C2M1 Z-0.01
R2M4 1.5K 1/10W
R2M2 3.3K 1/10W
Q2K0
3.9V
IC2A0③PLAY
IC2A0③REC
IC2A0④PLAY
IC2A0④REC
0.46Vp-p(H)
0.82Vp-p(H)

Recording of Liminance Signal

Playback of Liminance Signal

Recording Colour Signal.

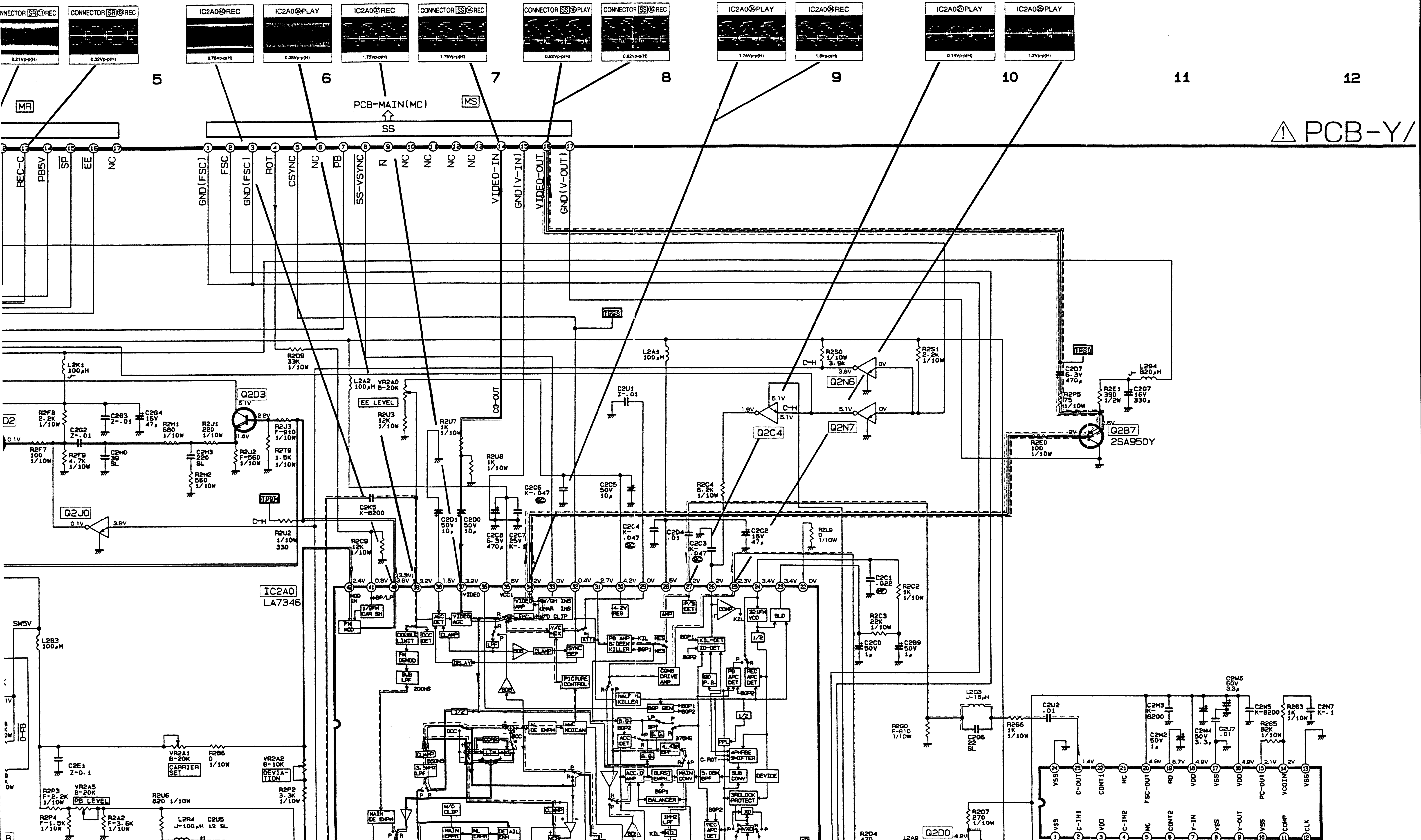
Playback ColourSignal.

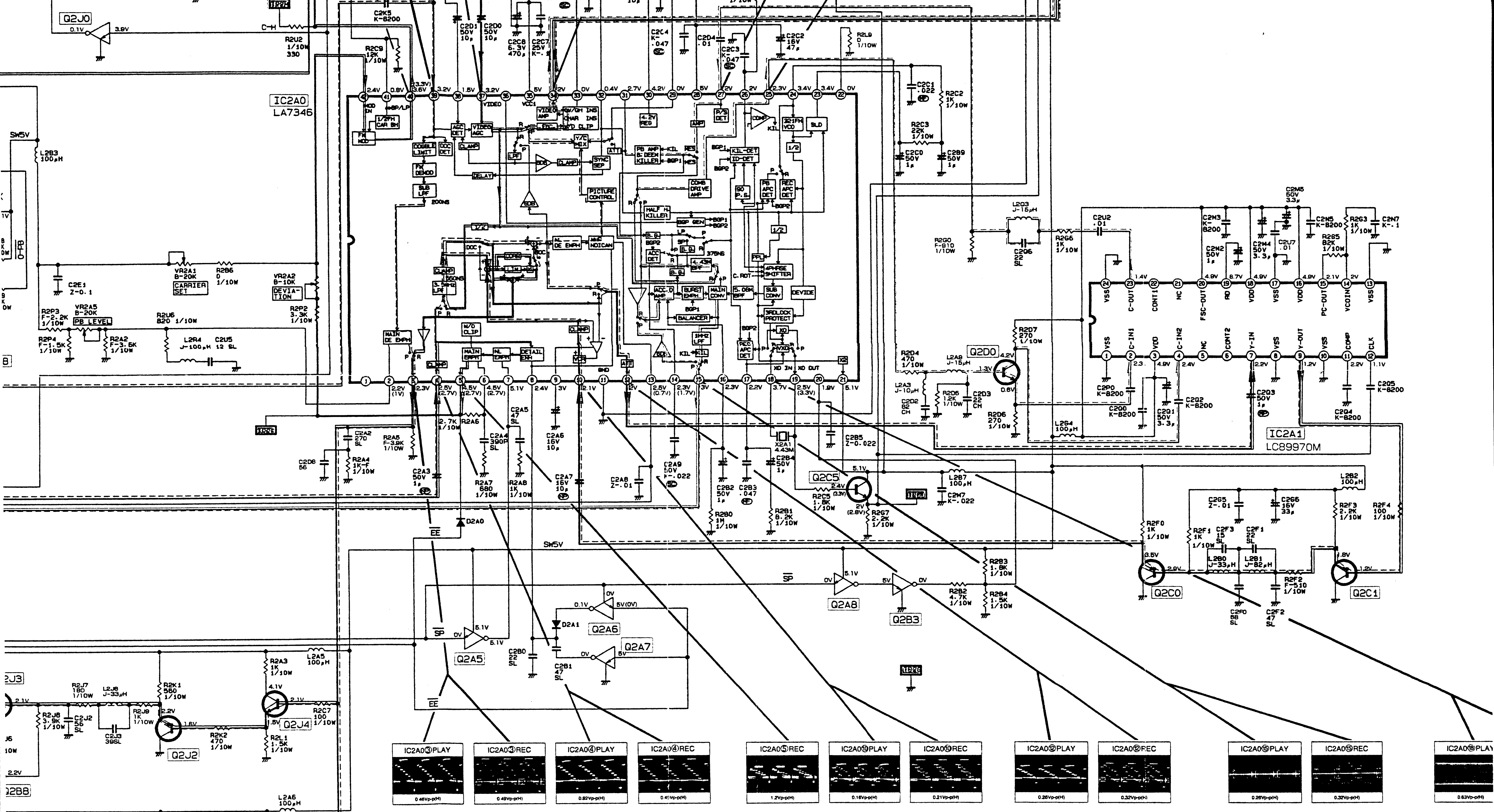
All diodes are 1SS252/1SS131 unless otherwise specified.

All NPN transistors are 2SC3053-C·D unless otherwise specif

All PNP transistors are 2SA1235-E·F unless otherwise specif

3


CONNECTOR SR⑪REC
0.21Vp-p(H)
CONNECTOR SR⑬REC
0.32Vp-p(H)
IC2A0㊷REC
0.76Vp-p(H)
IC2A0㊳PLAY
0.38Vp-p(H)
IC2A0㊲REC
1.75Vp-p(H)
CONNECTOR SS⑭REC
1.75Vp-p(H)
CONNECTOR SS⑯PLAY
0.92Vp-p(H)
CONNECTOR SS⑯REC
0.92Vp-p(H)
IC2A0㉔PLAY
1.75Vp-p(H)
IC2A0㉔REC
1.8Vp-p(H)
IC2A0㉗PLAY
0.14Vp-p(H)
IC2A0㉕PLAY
1.2Vp-p(H)
5
6
7
8
9
10
11
12
MR
PCB-MAIN(MC)
MS
SS
⚠ PCB-Y/
REC-C
PB5V
SP
EE
NC
GND(FSC)
FSC
GND(FSC)
ROT
CSYNC
NC
PB
SS-VSYNC
N
NC
NC
NC
NC
VIDEO-IN
GND(V-IN)
VIDEO-OUT
GND(V-OUT)
TP2B
TP2C
TP2A
L2K1 100μH
R2F8 2.2K 1/10W
C2G2 Z-.01
C2G3 Z-.01
C2G4 16V 47μ
R2H1 680 1/10W
R2J1 220 1/10W
Q2D3
5.1V
2.2V
1.6V
R2J3 F-910 1/10W
R2J2 F-560 1/10W
R2T9 1.5K 1/10W
R2F7 100 1/10W
R2F9 4.7K 1/10W
C2H0 39 SL
C2H3 220 SL
R2H2 560 1/10W
D2
0.1V
Q2J0
0.1V
3.9V
C-H
R2U2 1/10W 330
R2D9 33K 1/10W
L2A2 100μH
VR2A0 B-20K
EE LEVEL
R2U3 12K 1/10W
R2U7 1K 1/10W
CG-OUT
R2U8 1K 1/10W
C2K5 K-8200
R2C9 12K 1/10W
C2D1 50V 10μ
C2D0 50V 10μ
C2C8 6.3V 470μ
C2C7 25V K-.1
C2C6 K-.047
C2U1 Z-.01
C2C5 50V 10μ
C2C4 K-.047
C2D4 .01
C2C3 K-.047
L2A1 100μH
R2C4 8.2K 1/10W
C2C2 16V 47μ
R2L9 0 1/10W
R2S0 1/10W 3.9K
3.9V
0V
Q2N6
R2S1 2.2K 1/10W
1.9V
5.1V
C-H
5.1V
0V
Q2C4
Q2N7
C2D7 6.3V 470μ
R2P5 75 1/10W
R2E1 390 1/2W
C2G7 16V 330μ
L2G4 J-820μH
2.6V
2V
Q2B7
2SA950Y
R2E0 100 1/10W
IC2A0
LA7346
2.4V
0.8V
(3.3V) 3.6V
3.2V
1.5V
3.2V
5V
2V
0V
0.4V
2.7V
4.2V
0V
5V
2V
2V
2.3V
3.4V
3.4V
0V
C2C1 .022
R2C2 1K 1/10W
R2C3 22K 1/10W
C2C0 50V 1μ
C2B9 50V 1μ
FM MOD
1/2FH CAR SH
VIDEO
VCC1
AGC DET
VIDEO AGC
VIDEO AMP
SW/OH INS CHAR INS W/D CLIP
DOUBLE LIMIT
DOC DET
CLAMP
Y/C MIX
FM DEMOD
LPF
SUB LPF
200NS
DELAY
CLAMP
SYNC SEP
PICTURE CONTROL
4.2V REG
P/S DET
AMP
COMP
KIL
321FH VCO
SLD
1/2
PB AMP B-DEEM KILLER
KIL
BGP1
KIL-DET
ID-DET
BGP2
COMB DRIVE AMP
90 P.S
PB APC DET
REC APC DET
HALF H KILLER
BGP GEN
BGP1
BGP2
B.D
4.43M BPF
375NS
ACC DET
1/2
PPL
4PHASE SHIFTER
C.ROT
5.06M BPF
SUB CONV
DEVIDE
ACC AMP
BURST EMPH
MAIN CONV
BALANCER
3RDLOCK PROTECT
REC APC DET
XO
VXO
1MHz LPF
KIL
NL DE EMPH
NOICAN
DOC
CCMB
L.IM
CLAMP
3.5MHz LPF
MAIN DE EMPH
W/D CLIP
MAIN EMPH
NL EMPH
DETAIL EMPH
CLAMP
SW5V
L2B3 100μH
C2E1 Z-0.1
VR2A1 B-20K
CARRIER SET
R2B6 0 1/10W
VR2A2 B-10K
DEVIATION
R2P2 3.3K 1/10W
R2P3 F-2.2K 1/10W
VR2A5 B-20K
PB LEVEL
R2U6 820 1/10W
R2P4 F-1.5K 1/10W
R2A2 F-3.6K 1/10W
L2A4 J-100μH
C2U5 12 SL
R2G0 F-910 1/10W
L2G3 J-15μH
C2G6 22 SL
R2G6 1K 1/10W
C2U2 .01
1.4V
C2M3 K-8200
C2N2 50V 1μ
C2M4 50V 3.3μ
C2M5 50V 3.3μ
C2U7 .01
C2N5 K-8200
R2G3 1K 1/10W
C2N7 K-.1
R2G5 82K 1/10W
4.9V
8.7V
4.9V
4.9V
2.1V
2V
VSS
C-OUT
CONT1
NC
FSC-OUT
RD
VDD
VSS
VDD
PC-OUT
VCOIN
VSS
VSS
C-IN1
VDD
C-IN2
NC
CONT2
Y-IN
VSS
Y-OUT
VSS
COMP
CLK
R2G7 270 1/10W
Q2D0
4.2V
R2D4 470
L2A8


IC2A0
LA7346
IC2A1
LC89970M
Q2J0
Q2D0
Q2C5
Q2C0
Q2C1
Q2A5
Q2A6
Q2A7
Q2A8
Q2B3
Q2J2
Q2J4
Q2K3
Q2M0
D2A0
D2A1
SW5V
EE
SP
CARRIER SET
PB LEVEL
DEVIATION
IC2A0③PLAY
0.46Vp-p(H)
IC2A0③REC
0.49Vp-p(H)
IC2A0④PLAY
0.82Vp-p(H)
IC2A0④REC
0.45Vp-p(H)
IC2A0⑤REC
1.2Vp-p(H)
IC2A0⑩PLAY
0.16Vp-p(H)
IC2A0⑩REC
0.21Vp-p(H)
IC2A0⑫PLAY
0.26Vp-p(H)
IC2A0⑫REC
0.32Vp-p(H)
IC2A0⑮PLAY
0.26Vp-p(H)
IC2A0⑮REC
0.32Vp-p(H)
IC2A0⑱PLAY
0.63Vp-p(H)

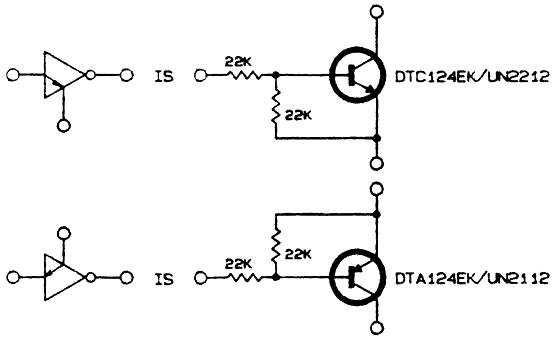
Recording of Liminance Signal.

Playback of Liminance Signal.

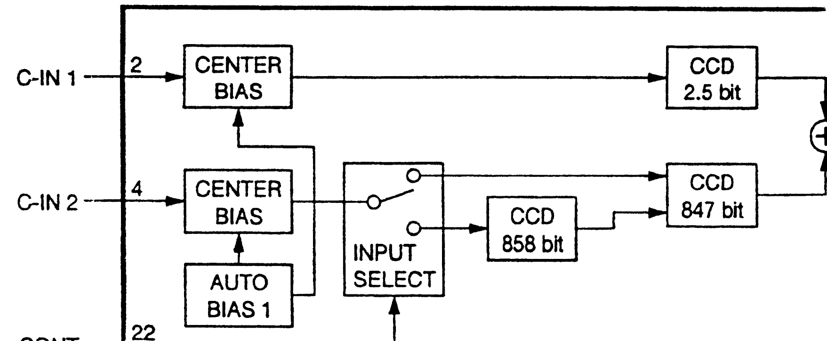
Recording Colour Signal.

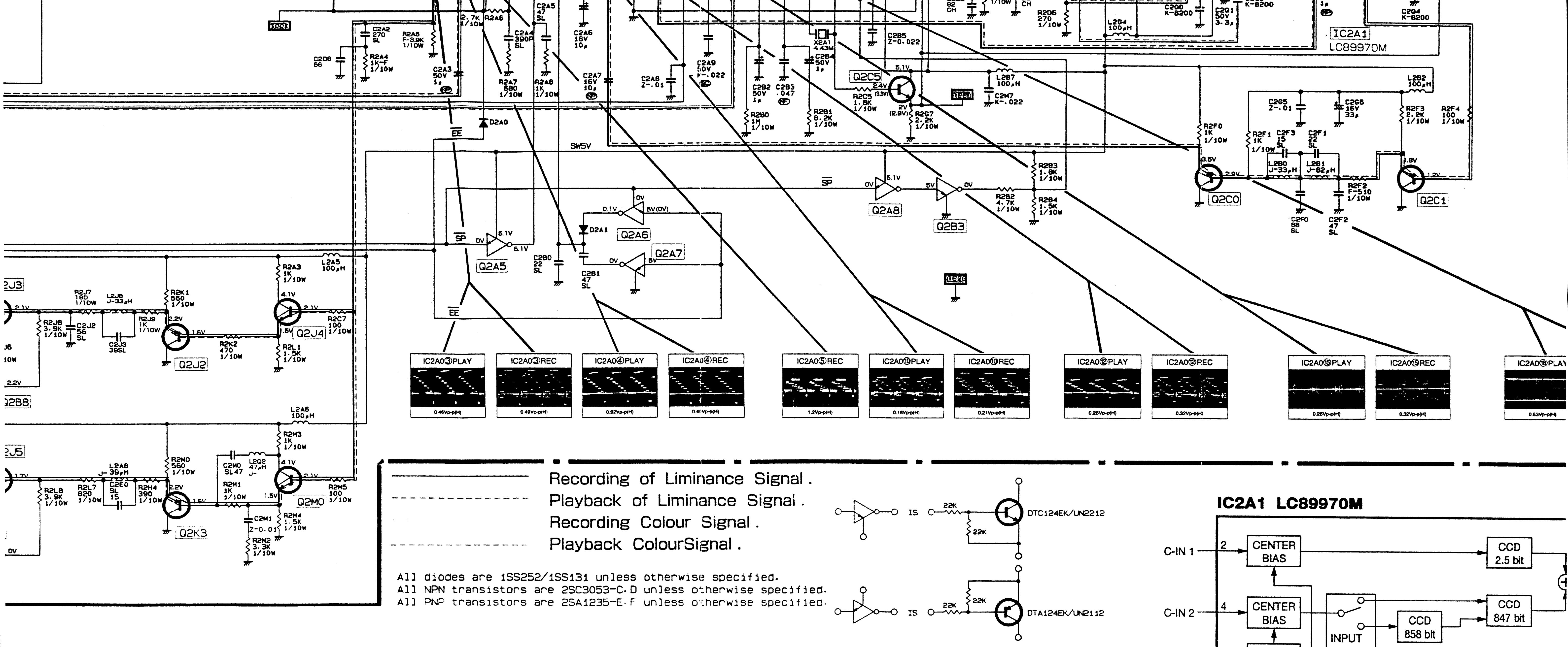
Playback ColourSignal.

All diodes are 1SS252/1SS131 unless otherwise specified.
All NPN transistors are 2SC3053-C.D unless otherwise specified.
All PNP transistors are 2SA1235-E.F unless otherwise specified.


IS
22K
22K
DTC124EK/UN2212
IS
22K
22K
DTA124EK/UN2112

IC2A1 LC89970M


C-IN 1
2
CENTER BIAS
CCD 2.5 bit
C-IN 2
4
CENTER BIAS
INPUT SELECT
CCD 858 bit
CCD 847 bit
AUTO BIAS 1
22


IC2A1
LC89970M
X2A1 4.43M
Q2C5
Q2C0
Q2C1
Q2A8
Q2B3
Q2A5
Q2A6
Q2A7
Q2J2
Q2J4
Q2K3
Q2M0
D2A0
D2A1
SW5V
EE
SP
C2A2 270 SL
R2A5 F-3.9K 1/10W
R2A4 1K-F 1/10W
C2D8 56
C2A3 50V 1μ
R2A6
C2A4 390P SL
C2A5 47 SL
R2A7 680 1/10W
R2A8 1K 1/10W
C2A6 16V 10μ
C2A7 16V 10μ
C2A8 Z-.01
C2A9 50V K-.022
C2B2 50V 1μ
C2B3 .047
C2B4 50V 1μ
C2B5 Z-0.022
R2B0 1M 1/10W
R2B1 8.2K 1/10W
R2C5 1.8K 1/10W
R2C7 100 1/10W
R2G7 2.2K 1/10W
C2M7 K-.022
L2G7 100μH
R2D6 270 1/10W
L2G4 100μH
C2G0 K-8200
C2G1 50V 3.3μ
C2G4 K-8200
L2G2 100μH
C2G5 Z-.01
C2G6 16V 33μ
R2F0 1K 1/10W
R2F1 1K 1/10W
C2F3 15 SL
C2F1 22 SL
L2G0 J-33μH
L2G1 J-82μH
R2F2 F-510 1/10W
R2F3 2.2K 1/10W
R2F4 100 1/10W
C2F0 68 SL
C2F2 47 SL
R2B3 1.8K 1/10W
R2B2 4.7K 1/10W
R2B4 1.5K 1/10W
C2B0 22 SL
C2B1 47 SL
R2A3 1K 1/10W
L2A5 100μH
R2K1 560 1/10W
R2J7 180 1/10W
L2J6 J-33μH
R2J6 3.9K 1/10W
C2J2 56 SL
C2J3 39SL
R2J9 1K 1/10W
R2K2 470 1/10W
R2L1 1.5K 1/10W
L2A6 100μH
R2M3 1K 1/10W
R2M0 560 1/10W
L2A8 J-39μH
C2M0 SL47
L2Q2 47μH J-
R2L8 3.9K 1/10W
R2L7 820 1/10W
C2E0 SL 15
R2H4 390 1/10W
R2M1 1K 1/10W
C2M1 Z-0.01
R2M2 3.3K 1/10W
R2M4 1.5K 1/10W
R2M5 100 1/10W
IC2A0③PLAY
0.46Vp-p(H)
IC2A0③REC
0.49Vp-p(H)
IC2A0④PLAY
0.82Vp-p(H)
IC2A0④REC
0.45Vp-p(H)
IC2A0⑤REC
1.2Vp-p(H)
IC2A0⑩PLAY
0.16Vp-p(H)
IC2A0⑩REC
0.21Vp-p(H)
IC2A0⑫PLAY
0.26Vp-p(H)
IC2A0⑫REC
0.32Vp-p(H)
IC2A0⑮PLAY
0.26Vp-p(H)
IC2A0⑮REC
0.32Vp-p(H)
IC2A0⑱PLAY
0.63Vp-p(H)
IS
22K
22K
DTC124EK/UN2212
IS
22K
22K
DTA124EK/UN2112

Recording of Liminance Signal.

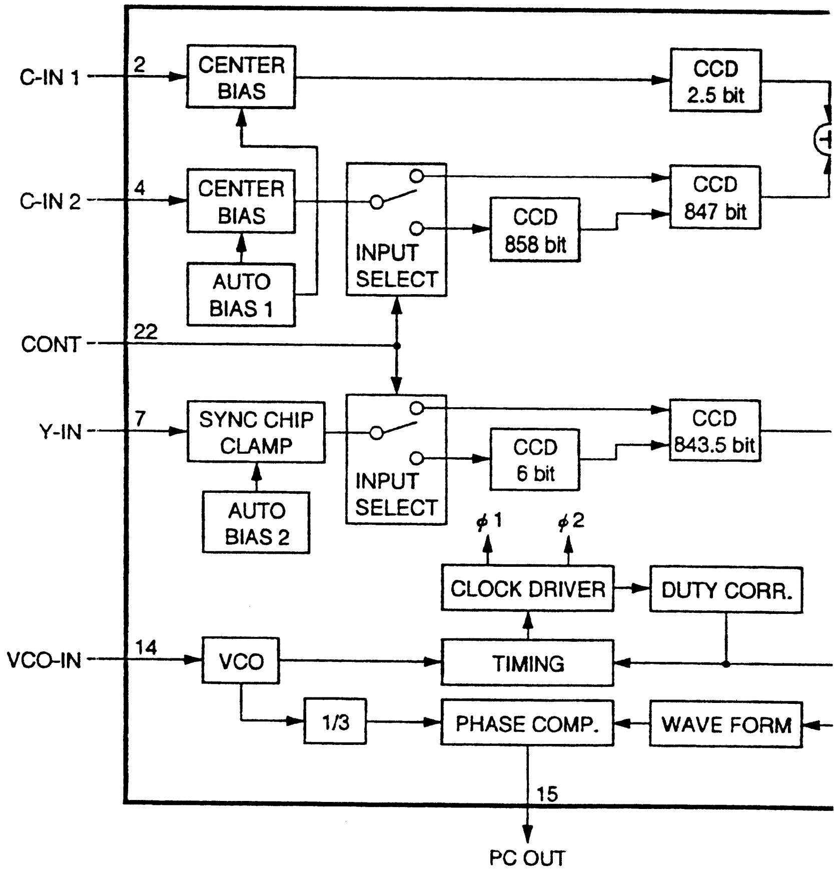
Playback of Liminance Signal.

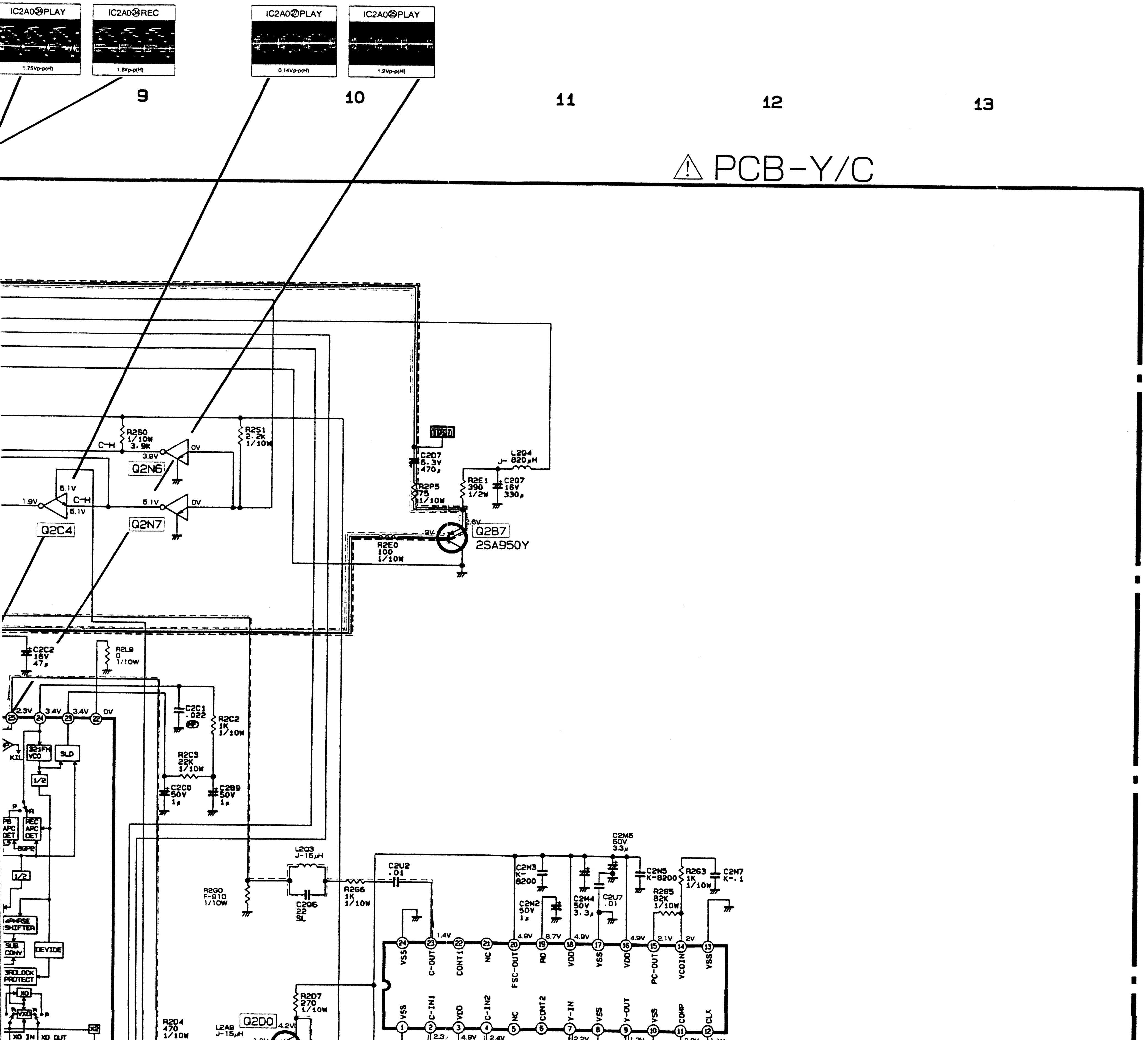
Recording Colour Signal.

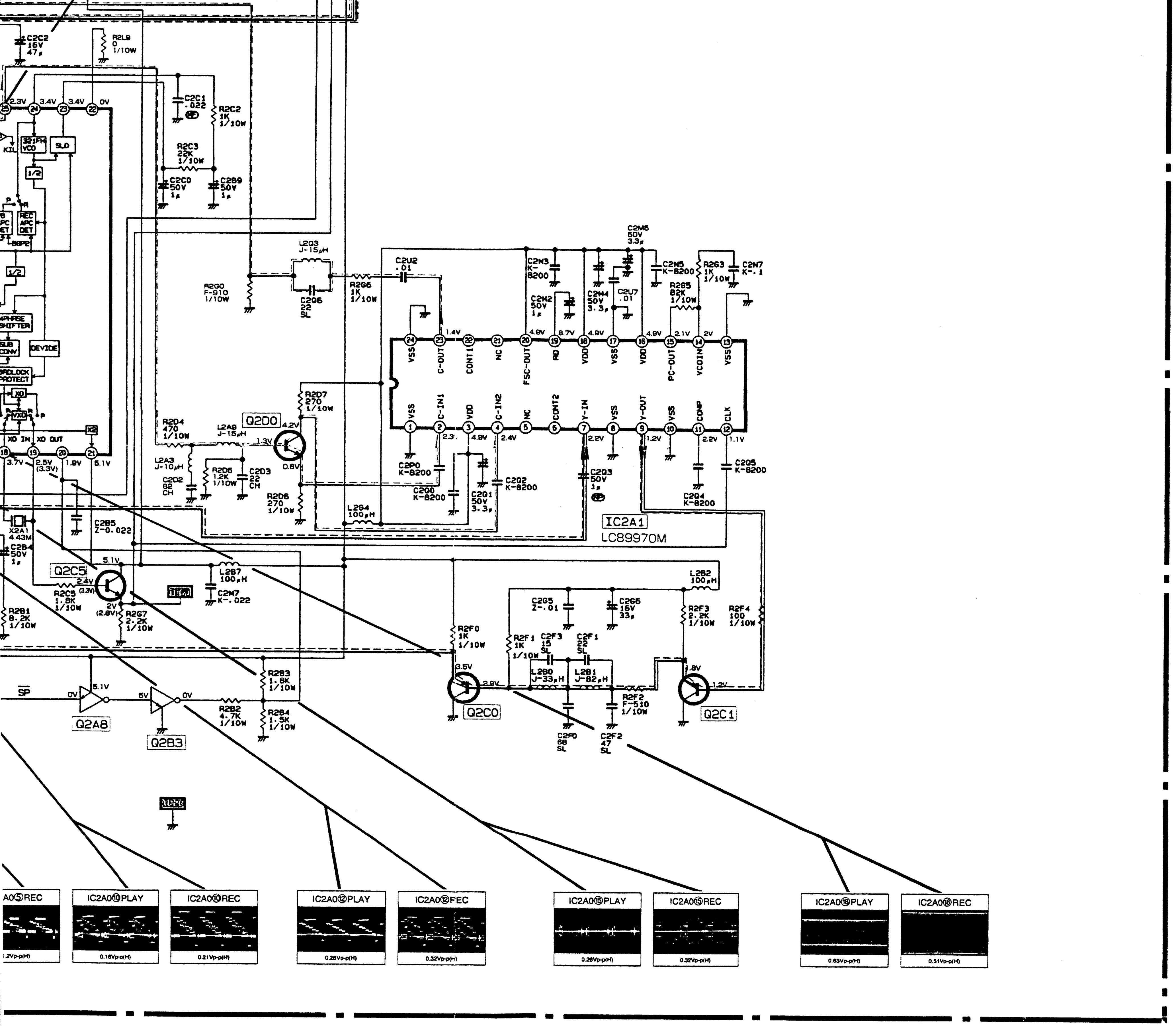
Playback ColourSignal.

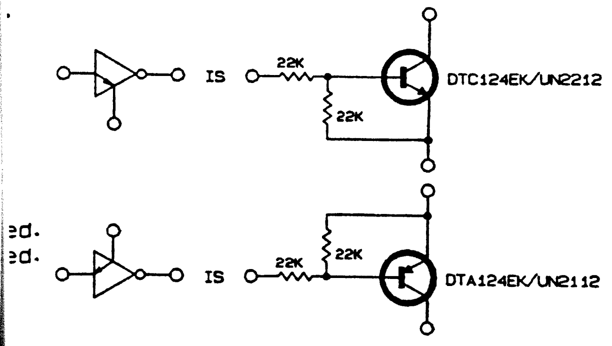
All diodes are 1SS252/1SS131 unless otherwise specified.
All NPN transistors are 2SC3053-C.D unless otherwise specified.
All PNP transistors are 2SA1235-E.F unless otherwise specified.

IC2A1 LC89970M

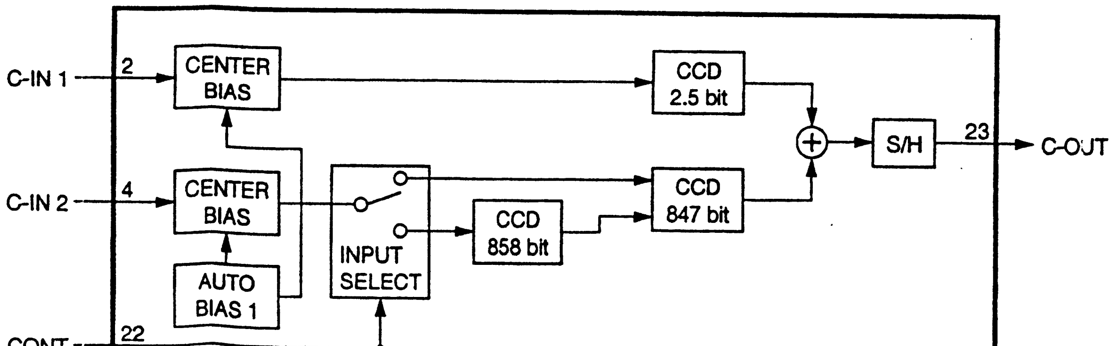

C-IN 1
2
CENTER BIAS
CCD 2.5 bit
C-IN 2
4
CENTER BIAS
AUTO BIAS 1
INPUT SELECT
CCD 858 bit
CCD 847 bit
CONT
22
Y-IN
7
SYNC CHIP CLAMP
AUTO BIAS 2
INPUT SELECT
CCD 6 bit
CCD 843.5 bit
φ1
φ2
CLOCK DRIVER
DUTY CORR.
VCO-IN
14
VCO
TIMING
1/3
PHASE COMP.
WAVE FORM
15
PC OUT

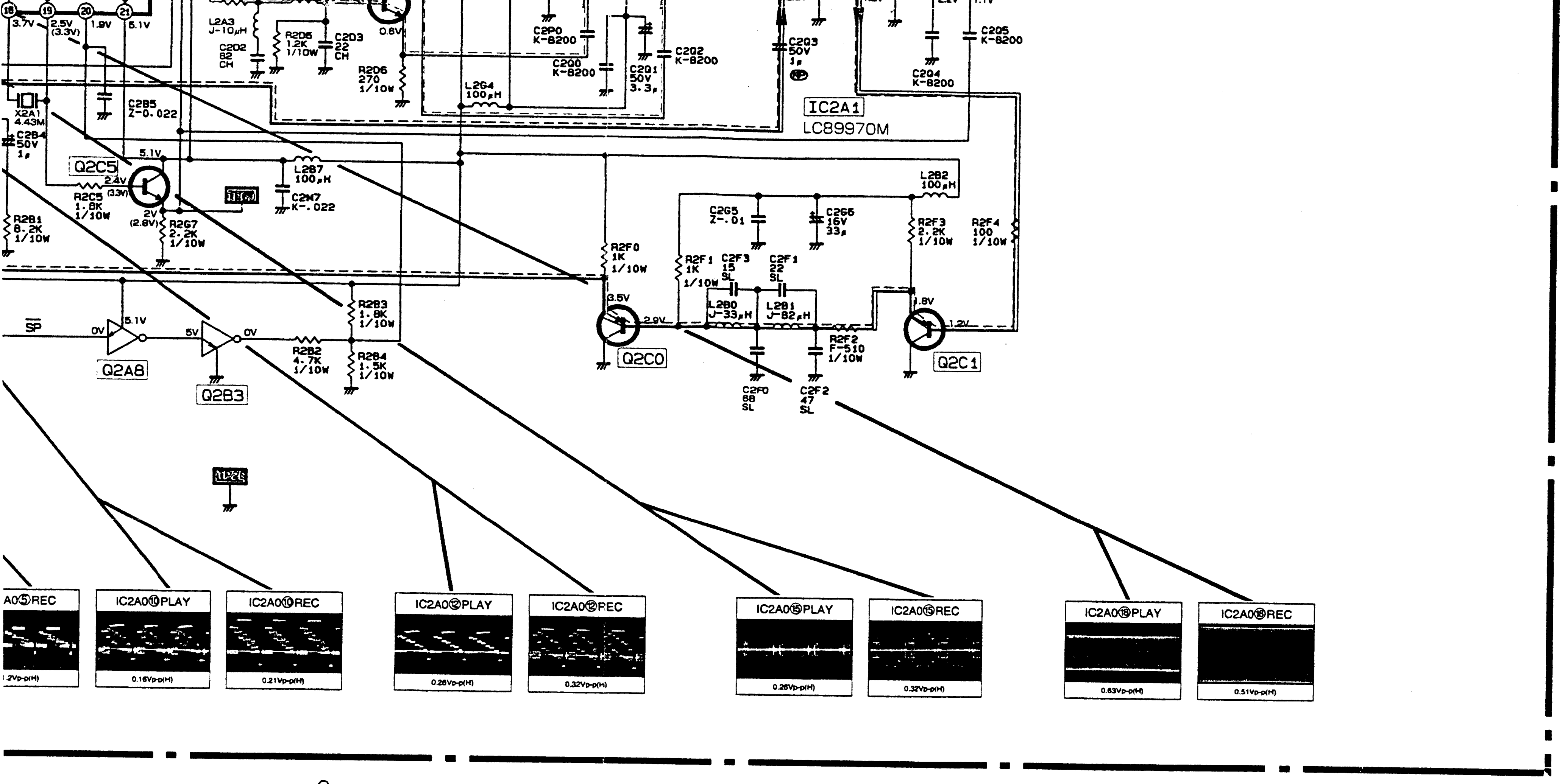

IC2A0㉞PLAY
1.75Vp-p(H)
IC2A0㉞REC
1.8Vp-p(H)
IC2A0㉗PLAY
0.14Vp-p(H)
IC2A0㉕PLAY
1.2Vp-p(H)
9
10
11
12
13
14
⚠ PCB-Y/C
R2S0 1/10W 3.9K
R2S1 2.2K 1/10W
Q2N6
Q2N7
Q2C4
C2D7 6.3V 470μ
R2P5 75 1/10W
L2Q4 J- 820μH
R2E1 390 1/2W
C2Q7 16V 330μ
Q2B7 2SA950Y
R2E0 100 1/10W
C2C2 16V 47μ
R2L9 0 1/10W
C2C1 .022
R2C2 1K 1/10W
R2C3 22K 1/10W
C2C0 50V 1μ
C2B9 50V 1μ
321FH VCO
SLD
1/2
PB APC DET
REC APC DET
4PHASE SHIFTER
SUB CONV
DEVIDE
3RDLOCK PROTECT
XO
VXO
XO IN
XO OUT
R2G0 F-910 1/10W
L2G3 J-15μH
C2G6 22 SL
R2G6 1K 1/10W
C2U2 .01
C2N3 K-8200
C2N2 50V 1μ
C2M4 50V 3.3μ
C2U7 .01
C2M5 50V 3.3μ
C2N5 K-8200
R2G3 1K 1/10W
R2B5 82K 1/10W
C2N7 K-.1
R2D7 270 1/10W
R2D4 470 1/10W
L2A9 J-15μH
Q2D0
VSS C-OUT CONT1 NC FSC-OUT RD VDD VSS VDD PC-OUT VCOIN VSS
VSS C-IN1 VDD C-IN2 NC CONT2 Y-IN VSS Y-OUT VSS COMP CLK

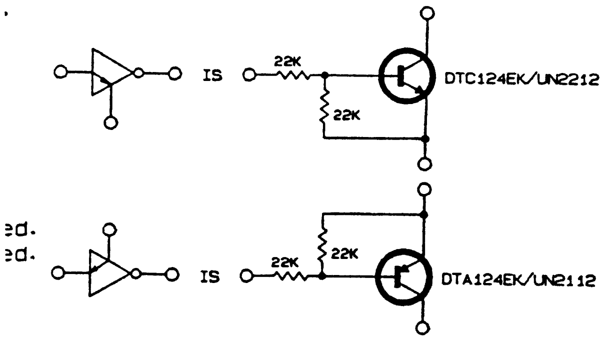

IC2A1
LC89970M
VSS
C-OUT
CONT1
NC
FSC-OUT
RD
VDD
VSS
VDD
PC-OUT
VCOIN
VSS
VSS
C-IN1
VDD
C-IN2
NC
CONT2
Y-IN
VSS
Y-OUT
VSS
COMP
CLK
Q2D0
Q2C5
Q2C0
Q2C1
Q2A8
Q2B3
L2B3 J-15μH
L2A9 J-15μH
L2B7 100μH
L2B2 100μH
X2A1 4.43M
321FH VCO
SLD
1/2
REC APC DET
4PHASE SHIFTER
SUB CONV
DEVIDE
SP
IC2A0⑩PLAY
IC2A0⑩REC
IC2A0⑫PLAY
IC2A0⑫REC
IC2A0⑮PLAY
IC2A0⑮REC
IC2A0⑱PLAY
IC2A0⑱REC
0.16Vp-p(H)
0.21Vp-p(H)
0.26Vp-p(H)
0.32Vp-p(H)
0.26Vp-p(H)
0.32Vp-p(H)
0.63Vp-p(H)
0.51Vp-p(H)


IS
22K
22K
DTC124EK/UN2212
IS
22K
22K
DTA124EK/UN2112
ed.
ed.

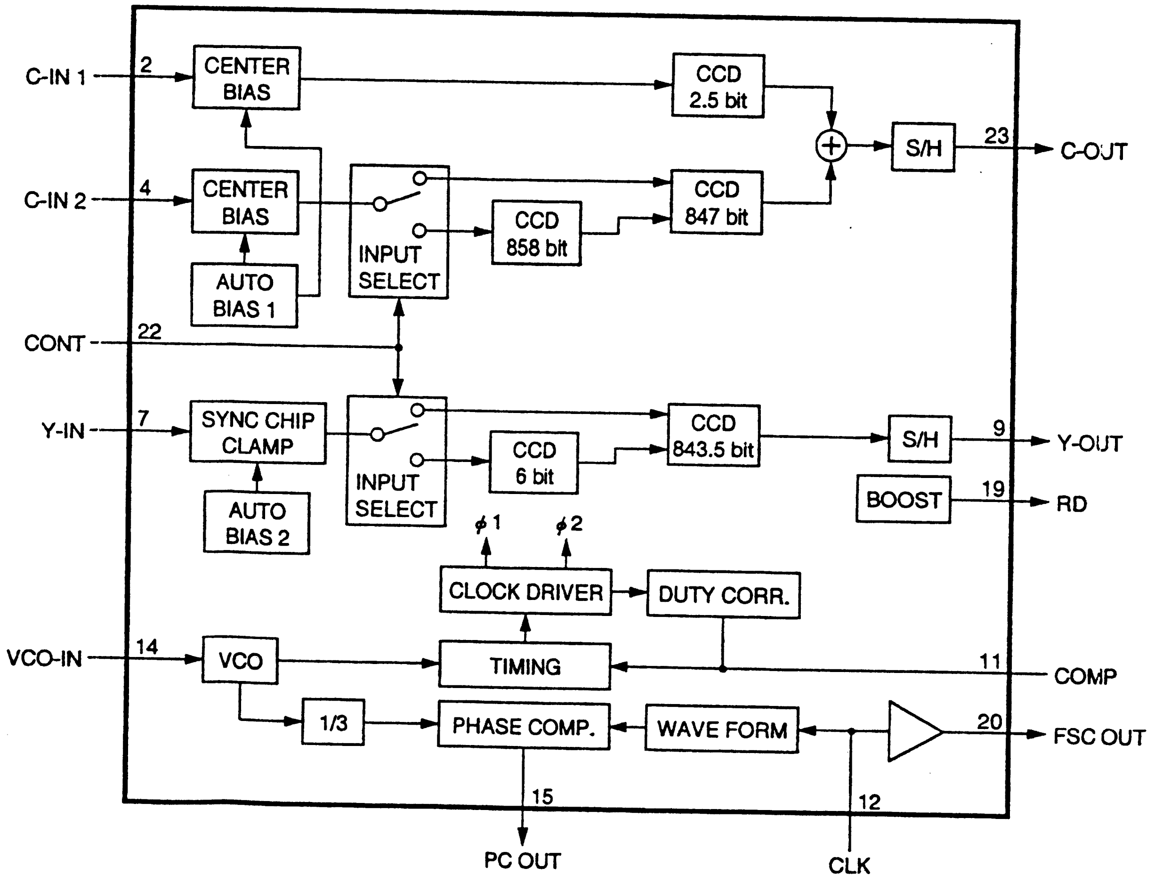
IC2A1 LC89970M

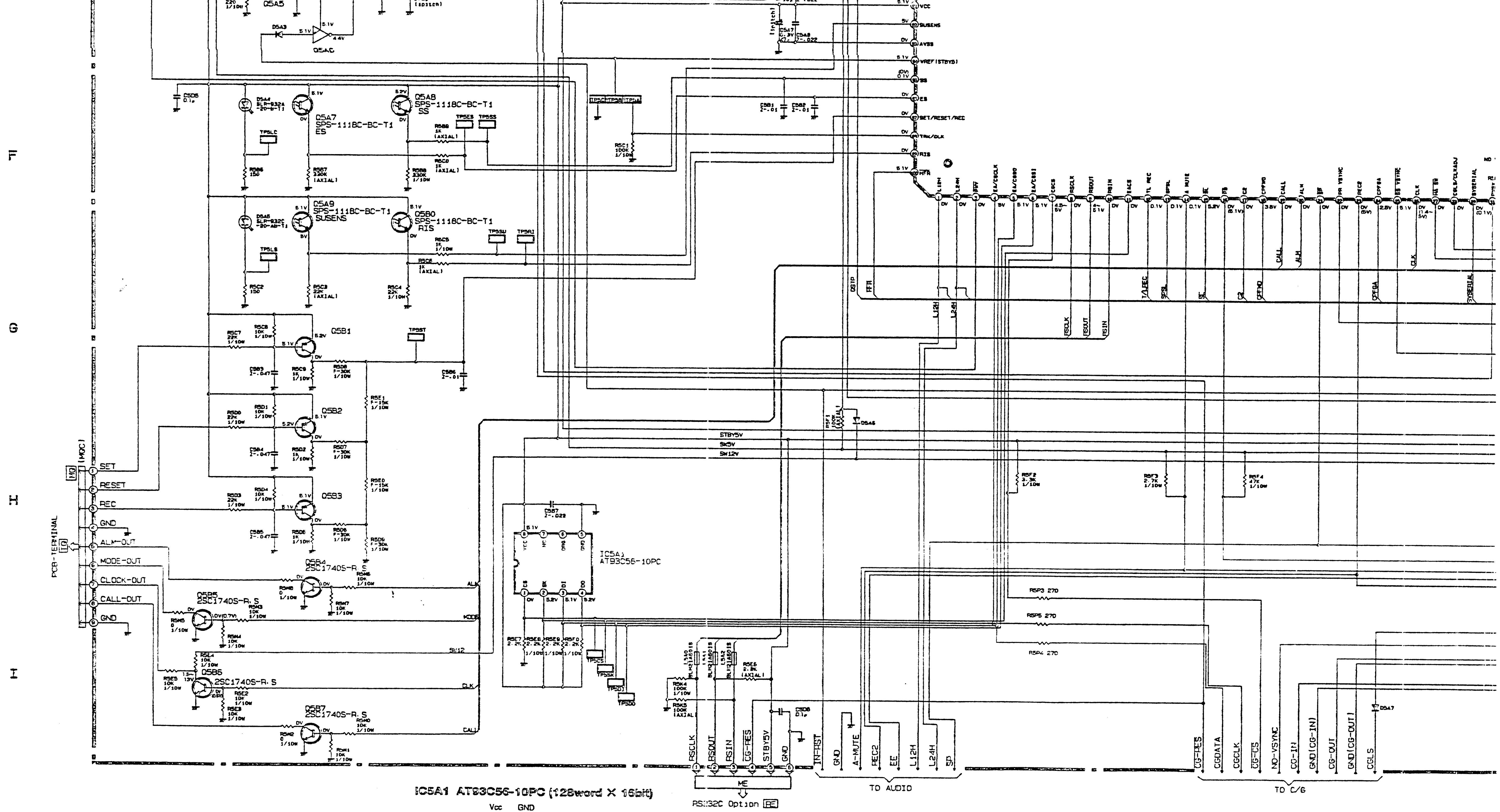

C-IN 1
2
CENTER BIAS
CCD 2.5 bit
S/H
23
C-OUT
C-IN 2
4
CENTER BIAS
INPUT SELECT
CCD 858 bit
CCD 847 bit
AUTO BIAS 1
CONT
22


IC2A1
LC89970M
Q2C5
Q2C0
Q2C1
Q2A8
Q2B3
X2A1 4.43M
L2B7 100μH
L2B4 100μH
L2B2 100μH
L2B0 J-33μH
L2B1 J-82μH
R2F0 1K 1/10W
R2F1 1K 1/10W
R2F3 2.2K 1/10W
R2F4 100 1/10W
R2F2 F-510 1/10W
R2B3 1.8K 1/10W
R2B2 4.7K 1/10W
R2B4 1.5K 1/10W
R2B1 8.2K 1/10W
R2C5 1.8K 1/10W
R2B7 2.2K 1/10W
R2B6 270 1/10W
R2D5 1.2K 1/10W
C2B5 Z-0.022
C2B4 50V 1μ
C2M7 K-.022
C2D3 22 CH
C2D2 82 CH
C2P0 K-8200
C2D0 K-8200
C2D1 50V 3.3μ
C2D2 K-8200
C2D3 50V 1μ
C2D4 K-8200
C2D5 K-8200
C2G5 Z-.01
C2G6 16V 33μ
C2F3 15 SL
C2F1 22 SL
C2F0 68 SL
C2F2 47 SL
L2A3 J-10μH
A0⑤REC
IC2A0⑩PLAY
IC2A0⑩REC
IC2A0⑫PLAY
IC2A0⑫REC
IC2A0⑮PLAY
IC2A0⑮REC
IC2A0⑱PLAY
IC2A0⑱REC
1.2Vp-p(H)
0.16Vp-p(H)
0.21Vp-p(H)
0.26Vp-p(H)
0.32Vp-p(H)
0.26Vp-p(H)
0.32Vp-p(H)
0.63Vp-p(H)
0.51Vp-p(H)

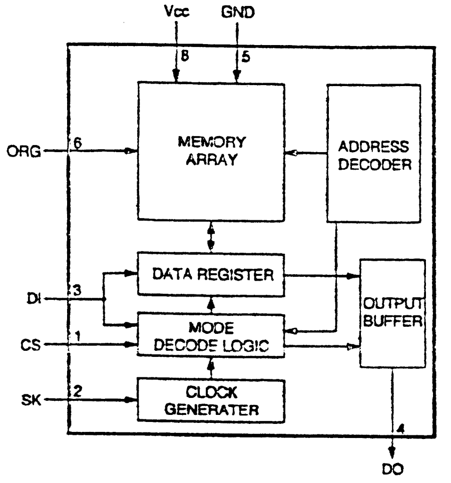

IS
22K
22K
DTC124EK/UN2212
ed.
ed.
IS
22K
22K
DTA124EK/UN2112

IC2A1 LC89970M

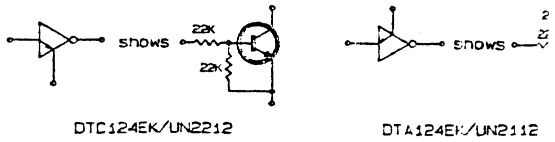

C-IN 1
2
CENTER BIAS
CCD 2.5 bit
S/H
23
C-OUT
C-IN 2
4
CENTER BIAS
INPUT SELECT
CCD 858 bit
CCD 847 bit
AUTO BIAS 1
CONT
22
Y-IN
7
SYNC CHIP CLAMP
INPUT SELECT
CCD 6 bit
CCD 843.5 bit
S/H
9
Y-OUT
BOOST
19
RD
AUTO BIAS 2
φ1
φ2
CLOCK DRIVER
DUTY CORR.
VCO-IN
14
VCO
TIMING
11
COMP
1/3
PHASE COMP.
WAVE FORM
20
FSC OUT
15
PC OUT
12
CLK

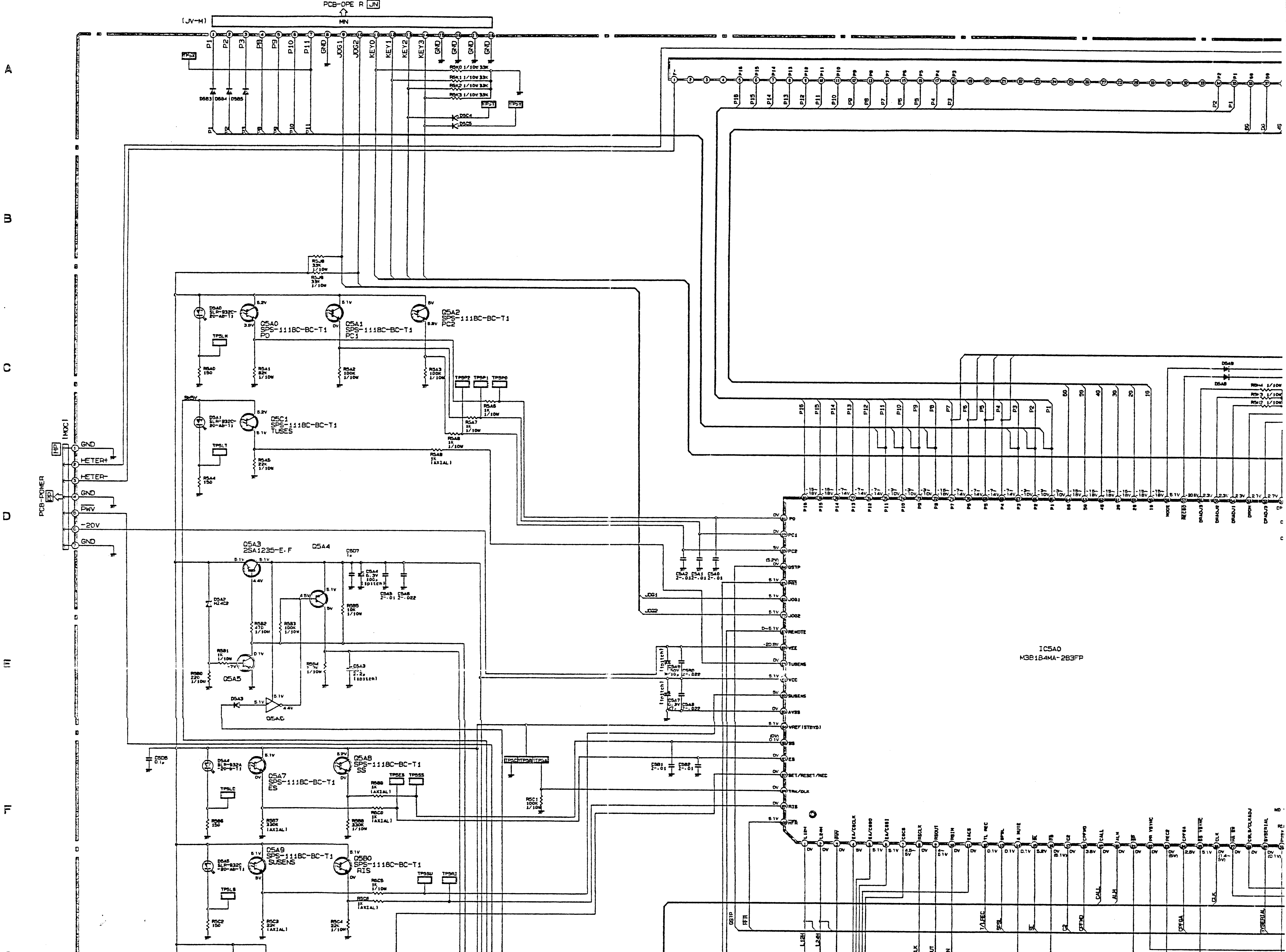

Q5A5
Q5A6
D5A3
C5D5 0.1μ
D5A4 SLR-932A -20-B-T1
Q5A7 SPS-111BC-BC-T1 ES
Q5A8 SPS-111BC-BC-T1 SS
TP5ES
TP5SS
TP5LC
R5B6 150
R5B7 330K (AXIAL)
R5B8 330K 1/10W
R5B6 1K (AXIAL)
R5C0 1K (AXIAL)
D5A5 SLR-932C -20-AB-T1
Q5A9 SPS-111BC-BC-T1 SUSENS
Q5B0 SPS-111BC-BC-T1 RIS
TP5LB
TP5SU
TP5RI
R5C2 150
R5C3 22K (AXIAL)
R5C4 22K 1/10W
R5C5 1K 1/10W
R5C6 1K (AXIAL)
TP5C
TP5B
TP5A
R5C1 100K 1/10W
C5B1 2-.01
C5B2 2-.01
VCC
SUSENS
AVSS
VREF(STBY5)
SS
ES
SET/RESET/REC
TRK/CLK
RIS
RFR
Q5B1
Q5B2
Q5B3
TP5ST
C5B6 2-.01
R5C7 22K 1/10W
R5C8 10K 1/10W
R5C9 1K 1/10W
R5D0 F-30K 1/10W
R5E1 F-15K 1/10W
R5D0 22K 1/10W
R5D1 10K 1/10W
R5D2 1K 1/10W
R5D7 F-30K 1/10W
R5E0 F-15K 1/10W
R5D3 22K 1/10W
R5D4 10K 1/10W
R5D6 1K 1/10W
R5D8 F-30K 1/10W
R5D9 F-30K 1/10W
C5B3 2-.047
C5B4 2-.047
C5B5 2-.047
PCB-TERMINAL
(MDC)
SET
RESET
REC
GND
ALM-OUT
MODE-OUT
CLOCK-OUT
CALL-OUT
GND
Q5B4 2SC1740S-R.S
Q5B5 2SC1740S-R.S
Q5B6 2SC1740S-R.S
Q5B7 2SC1740S-R.S
ALM
MODE
SW12
CLK
CALL
STBY5V
SW5V
SW12V
C5B7 2-.022
IC5A1 AT93C56-10PC
VCC
NC
ORG
GND
CS
SK
DI
DO
R5E7 2.2K
R5E8 2.2K
R5E9 2.2K
R5F0 2.2K
TP5CS
TP5SK
TP5DI
TP5DO
R5F1 100K (AXIAL)
D5A6
R5F2 3.3K 1/10W
R5F3 2.7K 1/10W
R5F4 47K 1/10W
R5P3 270
R5P5 270
R5P4 270
L5A0 BLM21A601S
L5A1 BLM21A601S
L5A2 BLM21A601S
R5E5 8.2K (AXIAL)
R5K4 100K 1/10W
R5K5 100K (AXIAL)
C5D8 0.1μ
D5A7
RSCLK
RSOUT
RSIN
CG-RES
STBY5V
GND
IN-RST
GND
A-MUTE
REC2
EE
L12H
L24H
SP
ME
RS232C Option
TO AUDIO
CG-RES
CGDATA
CGCLK
CG-CS
NO-VSYNC
CG-IN
GND(CG-IN)
CG-OUT
GND(CG-OUT)
CGLS
TO C/6
L12H
L24H
OSIP
RFR
RSCLK
RSOUT
RSIN
T/LREC
SPSL
ST
C2
CPFMD
CALL
ALM
CLK
CPFBA
SYSERIAL
F
G
H
I
J

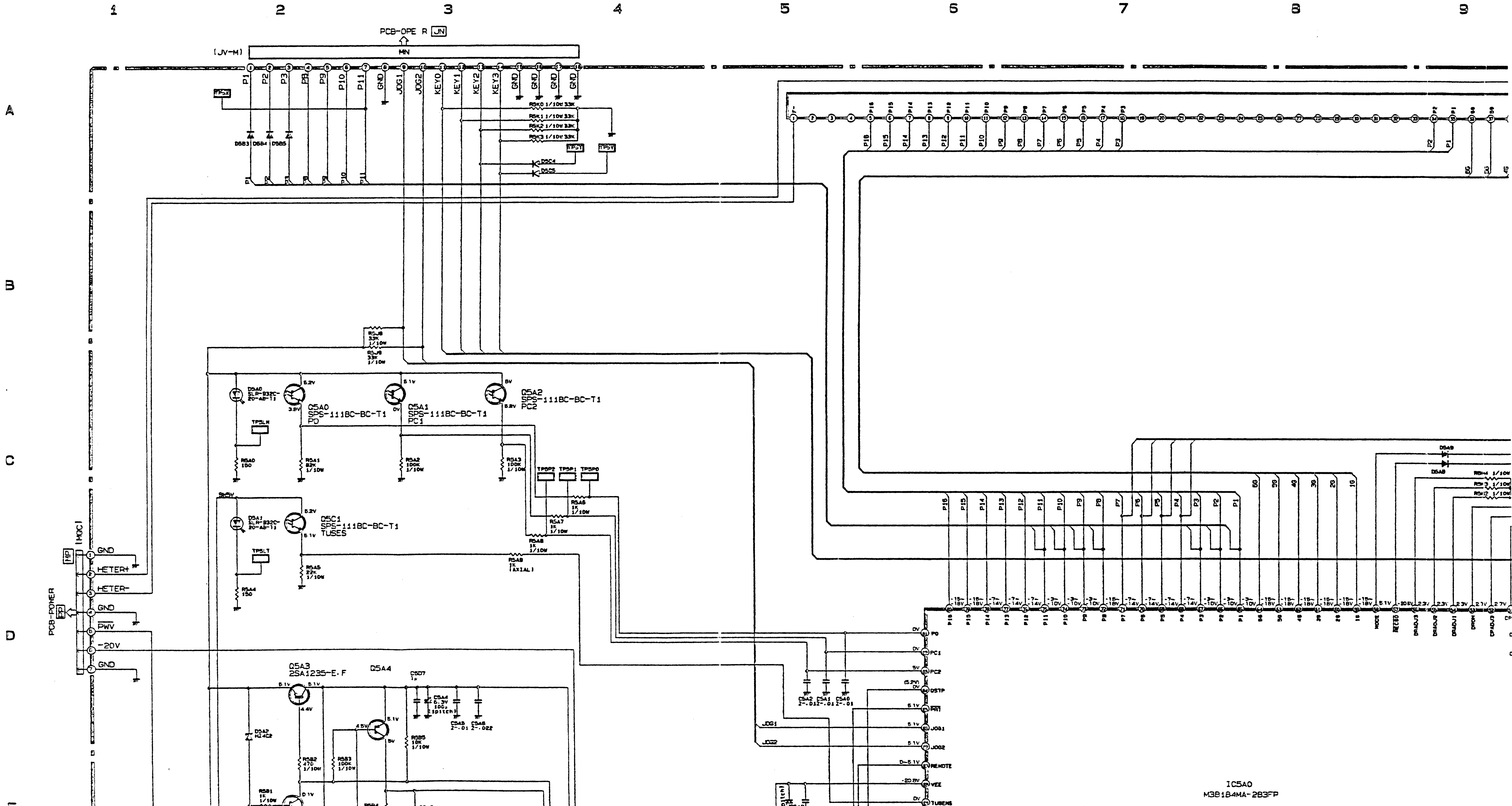
IC5A1 AT93C56-10PC (128word X 16bit)

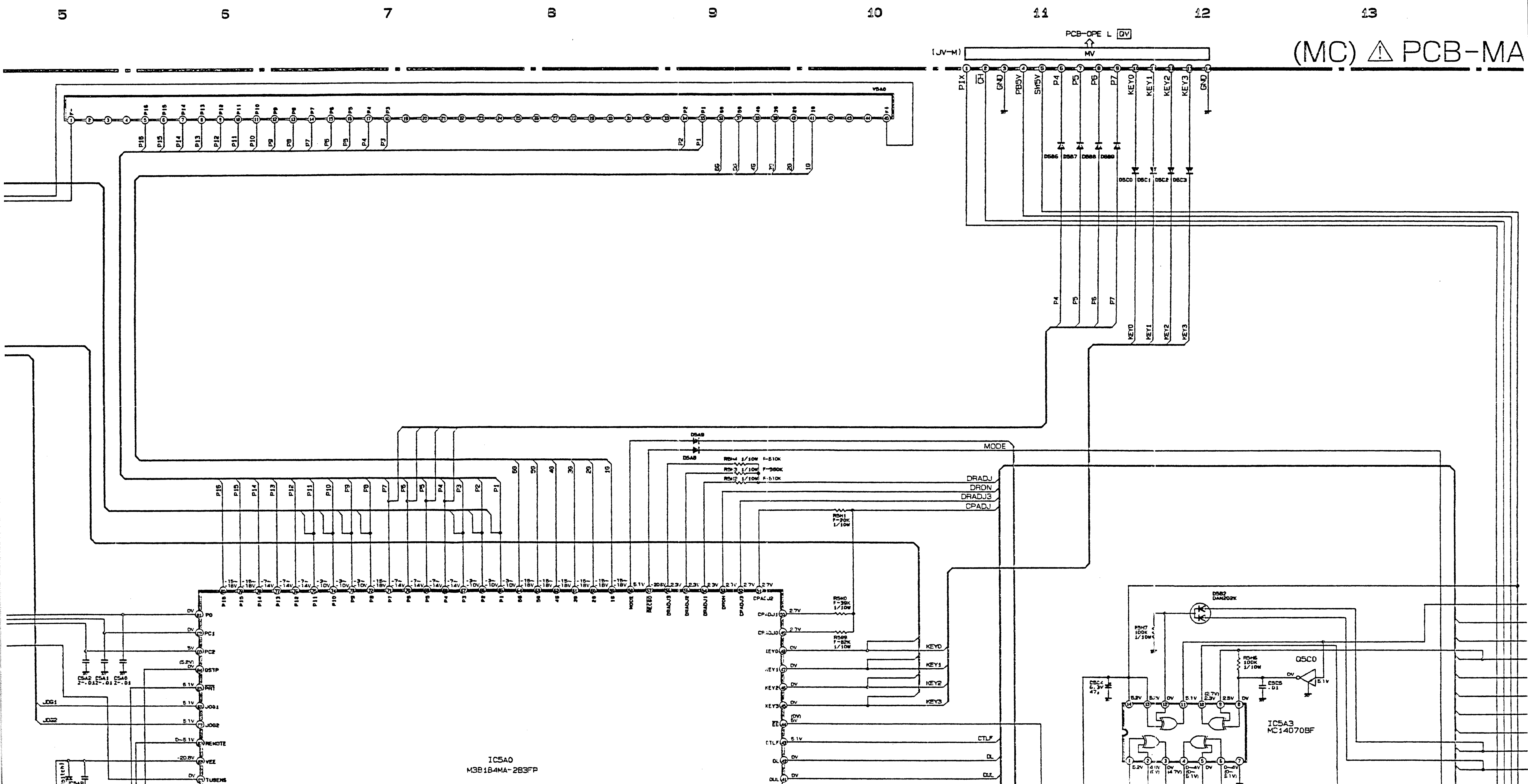

Vcc
GND
8
5
MEMORY ARRAY
ADDRESS DECODER
ORG
6
DATA REGISTER
DI
3
MODE DECODE LOGIC
CS
1
OUTPUT BUFFER
CLOCK GENERATER
SK
2
4
DO

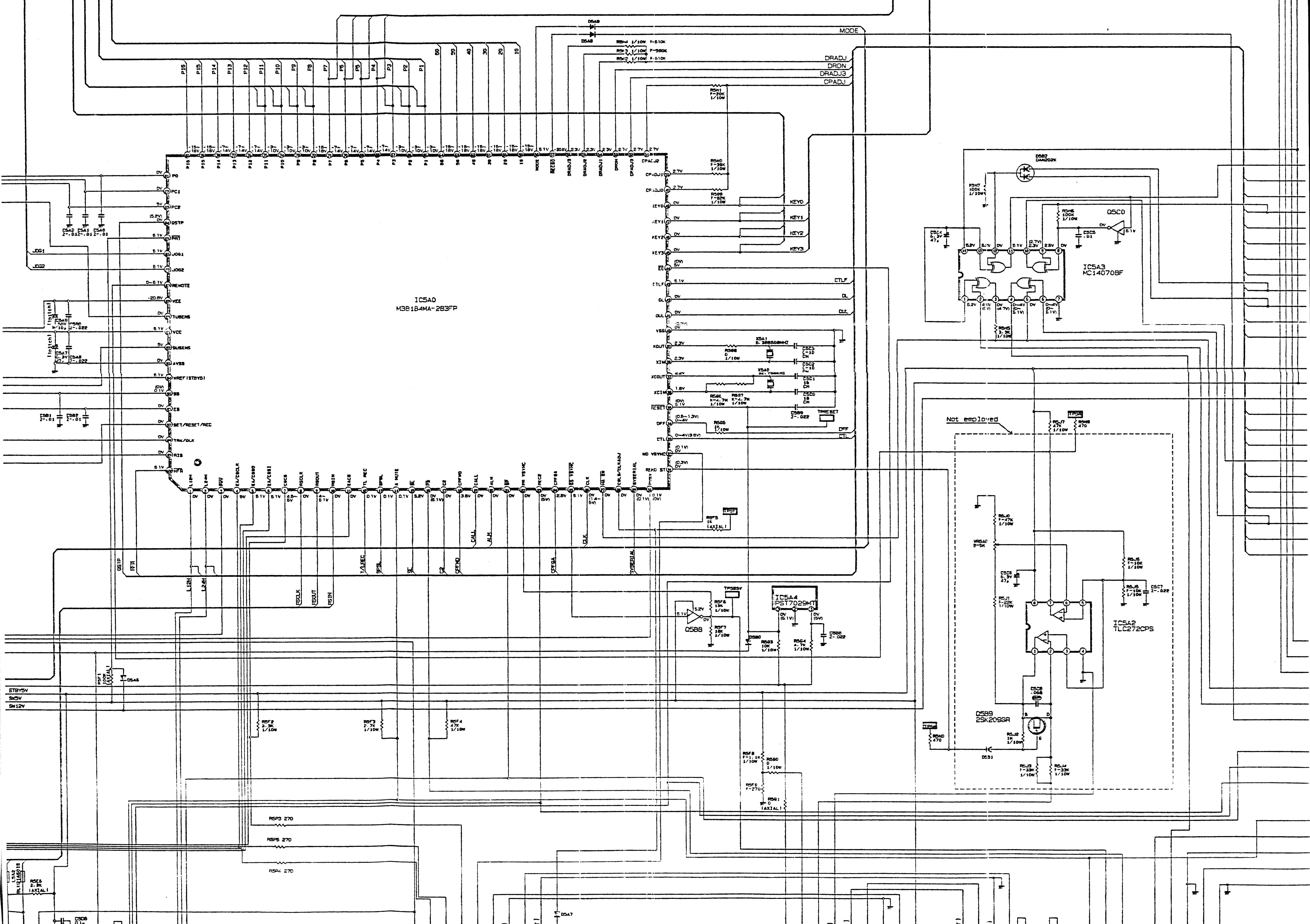
Note
Unless otherwise specified
PNP transistors are 2SA1037K-R.S/2SB709AI-R.S
NPN transistors are 2SC2412K-R.S/2SD601AI-R.S
All diodes are 1SS252/1SS131
PNP digital transistors are DTA124EK/UN2112
NPN digital transistors are DTC124EK/UN2212

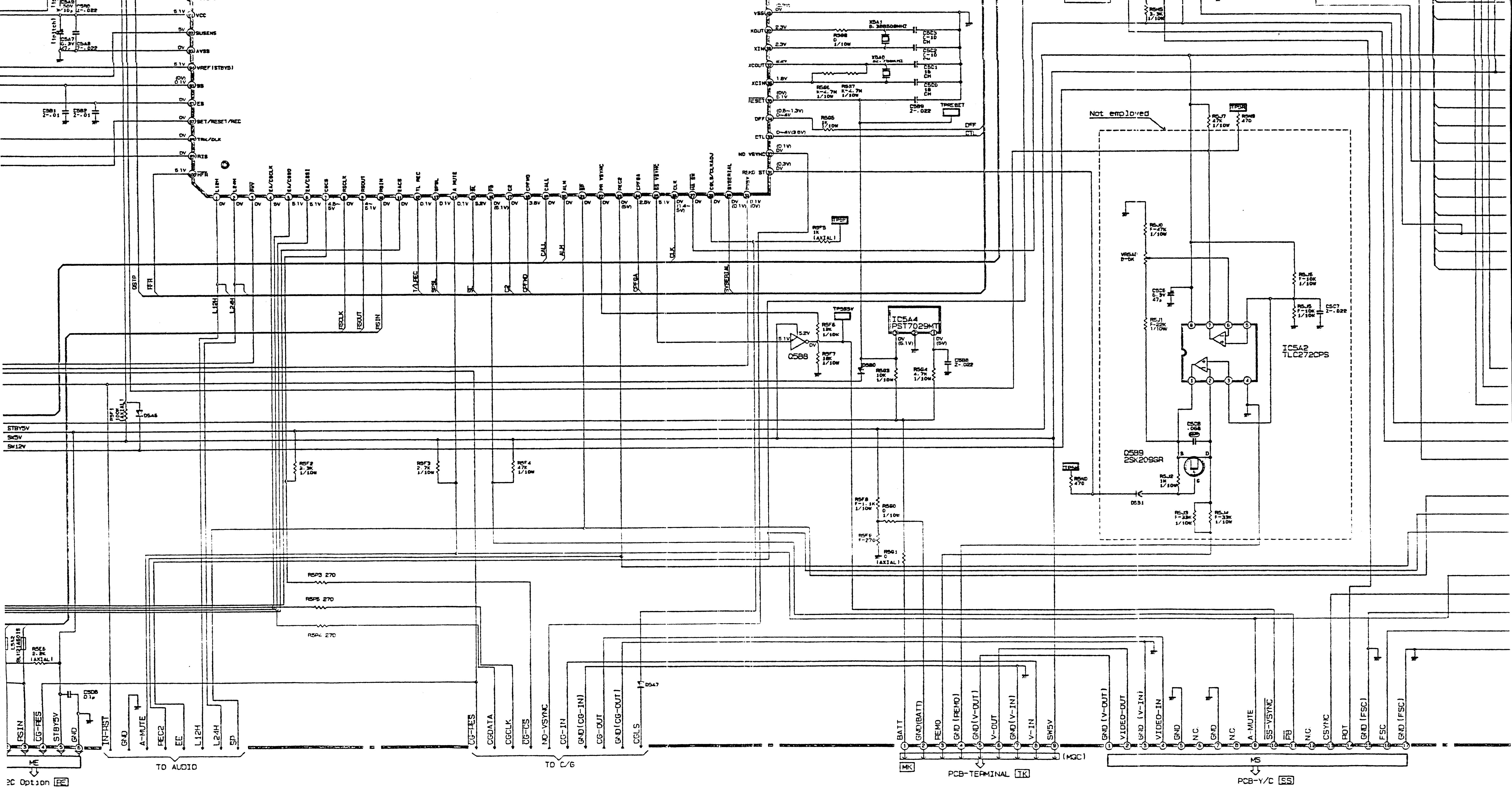

shows
22K
22K
DTC124EK/UN2212
shows
DTA124EK/UN2112


PCB-OPE R JN
(JV-M)
MN
P1
P2
P3
P8
P9
P10
P11
GND
JOG1
JOG2
KEY0
KEY1
KEY2
KEY3
GND
TP5X
D583
D584
D585
R5K0 1/10W 33K
R5K1 1/10W 33K
R5K2 1/10W 33K
R5K3 1/10W 33K
D5C4
D5C5
TP5T
TP5Y
A
B
C
D
E
F
R5J8 33K 1/10W
R5J9 33K 1/10W
Q5A0 SPS-111BC-BC-T1 PO
Q5A1 SPS-111BC-BC-T1 PC1
Q5A2 SPS-111BC-BC-T1 PC2
D5A0 SLR-932C-20-AB-T1
TP5LN
R5A0 150
R5A1 82K 1/10W
R5A2 100K 1/10W
R5A3 100K 1/10W
TP5P2
TP5P1
TP5P0
R5A6 1K 1/10W
R5A7 1K 1/10W
R5A8 1K 1/10W
R5A9 1K (AXIAL)
Q5C1 SPS-111BC-BC-T1 TUSES
D5A1 SLR-932C-20-AB-T1
TP5LT
R5A5 22K 1/10W
R5A4 150
PCB-POWER
PP
HP
(MOC)
GND
HETER+
HETER-
GND
PWV
-20V
GND
Q5A3 2SA1235-E.F
Q5A4
C5D7 1μ
C5A4 6.3V 100μ (spitch)
C5A5 2-.01
C5A6 2-.022
D5A2 HZ4C2
R5B2 470 1/10W
R5B3 100K 1/10W
R5B5 10K 1/10W
R5B1 1K 1/10W
R5B0 220 1/10W
Q5A5
R5B4 2.7K 1/10W
C5A3 2.2μ (spitch)
D5A3
Q5A6
C5A2 2-.012
C5A1 2-.01
C5A0 2-.01
JOG1
JOG2
C5A9 50V 10μ
C5B0 2-.022
C5A7 6.3V 47μ
C5A8 2-.022
C5D6 0.1μ
Q5A7 SPS-111BC-BC-T1 ES
Q5A8 SPS-111BC-BC-T1 SS
D5A4 SLR-932A-20-B-T1
TP5LC
R5B6 150
R5B7 220K (AXIAL)
R5B8 220K 1/10W
R5B9 1K (AXIAL)
R5C0 1K (AXIAL)
TP5ES
TP5SS
TP5C
TP5B
TP5A
R5C1 100K 1/10W
C5B1 2-.01
C5B2 2-.01
Q5A9 SPS-111BC-BC-T1 SUSENS
Q5B0 SPS-111BC-BC-T1 RIS
D5A5 SLR-932C-20-AB-T1
TP5LS
R5C2 150
R5C3 22K (AXIAL)
R5C4 22K 1/10W
R5C5 1K 1/10W
R5C6 1K (AXIAL)
TP5SU
TP5RI
IC5A0
M38184MA-283FP
PO
PC1
PC2
OSTP
FRI
JOG1
JOG2
REMOTE
VEE
TUSENS
VCC
SUSENS
AVSS
VREF(STBYB)
SS
ES
SET/RESET/REC
TRK/CLK
RIS
HFR
P16
P15
P14
P13
P12
P11
P10
P9
P8
P7
P6
P5
P4
P3
P2
P1
5G
5G
4G
3G
2G
1G
MODE
D5A9
D5A8
OSTP
HFR
CALL
ALM
CLK
SYSERIAL


1
2
3
4
5
6
7
8
9
A
B
C
D
PCB-OPE R JN
(JV-M)
MN
P1
P2
P3
P8
P9
P10
P11
GND
JOG1
JOG2
KEY0
KEY1
KEY2
KEY3
GND
TP5X
D5B3 D5B4 D5B5
R5K0 1/10W 33K
R5K1 1/10W 33K
R5K2 1/10W 33K
R5K3 1/10W 33K
TP5Y
D5C4
D5C5
R5J8 33K 1/10W
R5J9 33K 1/10W
D5A0 SLR-B32C-20-AB-T1
Q5A0 SPS-111BC-BC-T1 P0
Q5A1 SPS-111BC-BC-T1 PC1
Q5A2 SPS-111BC-BC-T1 PC2
TP5LN
R5A0 150
R5A1 82K 1/10W
R5A2 100K 1/10W
R5A3 100K 1/10W
TP5P2 TP5P1 TP5P0
R5A6 1K 1/10W
R5A7 1K 1/10W
R5A8 1K 1/10W
R5A9 1K (AXIAL)
D5A1 SLR-B32C-20-AB-T1
Q5C1 SPS-111BC-BC-T1 TUSES
TP5LT
R5A4 150
R5A5 22K 1/10W
PCB-POWER
HP
(MOC)
FP
GND
HETER+
HETER-
GND
PWV
-20V
GND
Q5A3 2SA1235-E·F
Q5A4
D5A2 MZ4C2
R5B2 470 1/10W
R5B3 100K 1/10W
R5B5 10K 1/10W
R5B1 1K 1/10W
C5D7
C5A4 6.3V 100
C5A5 2-.01
C5A6 2-.022
C5A2 2-.01
C5A1 2-.01
C5A0 2-.01
JOG1
JOG2
P0
PC1
PC2
OSTP
PRT
JOG1
JOG2
REMOTE
VEE
TUSENS
MODE
RESET
D5A9
D5A8
R5M4 1/10W
R5M3 1/10W
R5M2 1/10W
IC5A0
M38184MA-283FP

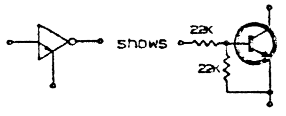

5
6
7
8
9
10
11
12
13
(MC) ⚠ PCB-MA
PCB-OPE L QV
(JV-M)
MV
P1X
CH
GND
PB5V
SW5V
P4
P5
P6
P7
KEY0
KEY1
KEY2
KEY3
GND
D586
D587
D588
D589
D5C0
D5C1
D5C2
D5C3
V5A0
P16
P15
P14
P13
P12
P11
P10
P9
P8
P7
P6
P5
P4
P3
P2
P1
6G
5G
4G
3G
2G
1G
D5A9
D5A8
R5H4 1/10W F-510K
R5H3 1/10W F-360K
R5H2 1/10W F-510K
MODE
DRADJ
DRON
DRADJ3
CPADJ
R5H1 F-20K 1/10W
R5H0 F-39K 1/10W
R589 F-82K 1/10W
MODE
RECED
DRADJ3
DRADJ2
DRADJ1
DRON
CPADJ3
CPADJ2
CPADJ1
CPADJ0
KEY0
KEY1
KEY2
KEY3
EE
CTLF
DL
DUL
CTLF
DL
DUL
P0
PC1
PC2
DSTP
PRT
JOG1
JOG2
REMOTE
VEE
TUSENS
JOG1
JOG2
C5A2 2-.01
C5A1 2-.01
C5A0 2-.01
IC5A0
M38184MA-283FP
D582
DAN202K
R5H7 100K 1/10W
R5H6 100K 1/10W
Q5C0
C5C4 6.3V 47
C5C5 .01
IC5A3
MC14070BF
5.2V
5.1V
0V
2.3V
(2.7V)
2.5V
2.7V
-15~-18V
-7~-14V
-3~-10V
-20.6V
(5.2V)
0-5.1V
-20.8V
0-4V
(0-5.1V)
(4.7V)


IC5A0
M38184MA-283FP
IC5A3
MC14070BF
IC5A2
TLC272CPS
IC5A4
PST7029MT
Q5C0
Q588
Q589
2SK209GR
D5B2
DAN202K
Not employed
MODE
DRADJ
DRON
DRADJ3
CPADJ
KEY0
KEY1
KEY2
KEY3
CTLF
DL
DUL
DFF
CTL
JOG1
JOG2
STBY5V
SK5V
SW12V
L12H
L24H
RSCLK
RSOUT
RSIN
CALL
ALM
CLK
T/AREC
SFSL
CPFG
SYSERIAL
DSTP
FFR
TPRESET
TP5B5V
X5A1
X5A0
RSP3 270
RSP5 270
RSP4 270
D5A7
D5B1
D5A5
D5A8
D5A9

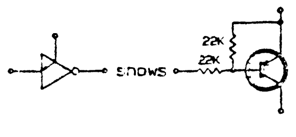

VCC
SUBENS
AVSS
VREF(STBY5)
SS
ES
SET/RESET/REC
TRK/CLK
RIS
RFR
VSS
XOUT
XIN
XCOUT
XCIN
RESET
DFF
CTL
NO VSYNC
Not employed
TP5R
IC5A2
TLC272CPS
IC5A4
PST7029MT
TP583V
Q588
Q589
2SK209GR
D580
D591
D546
D547
STBY5V
SW5V
SW12V
RSP3 270
RSP5 270
RSP4 270
RSIN
CG-RES
STBY5V
GND
ME
2C Option PE
IN-RST
GND
A-MUTE
REC2
EE
L12H
L24H
SP
TO AUDIO
CG-RES
CGDATA
CGCLK
CG-CS
NO-VSYNC
CG-IN
GND(CG-IN)
CG-OUT
GND(CG-OUT)
CGLS
TO C/G
BATT
GND(BATT)
REMO
GND(REMO)
GND(V-OUT)
V-OUT
GND(V-IN)
V-IN
SW5V
(MQC)
MK
PCB-TERMINAL TK
GND(V-OUT)
VIDEO-OUT
GND(V-IN)
VIDEO-IN
GND
NC
GND
NC
A-MUTE
SS-VSYNC
PB
NC
CSYNC
ROT
GND(FSC)
FSC
GND(FSC)
MS
PCB-Y/C SS

Note

Unless otherwise specified
PNP transistors are 2SA1037K-R.S/2SB709AI-R.S
NPN transistors are 2SC2412K-R.S/2SD601AI-R.S
All diodes are 1SS252/1SS131
PNP digital transistors are DTA124EK/UN2112
NPN digital transistors are DTC124EK/UN2212

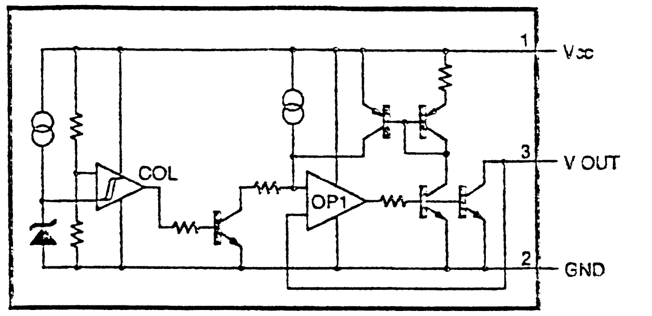

shows
22K
22K

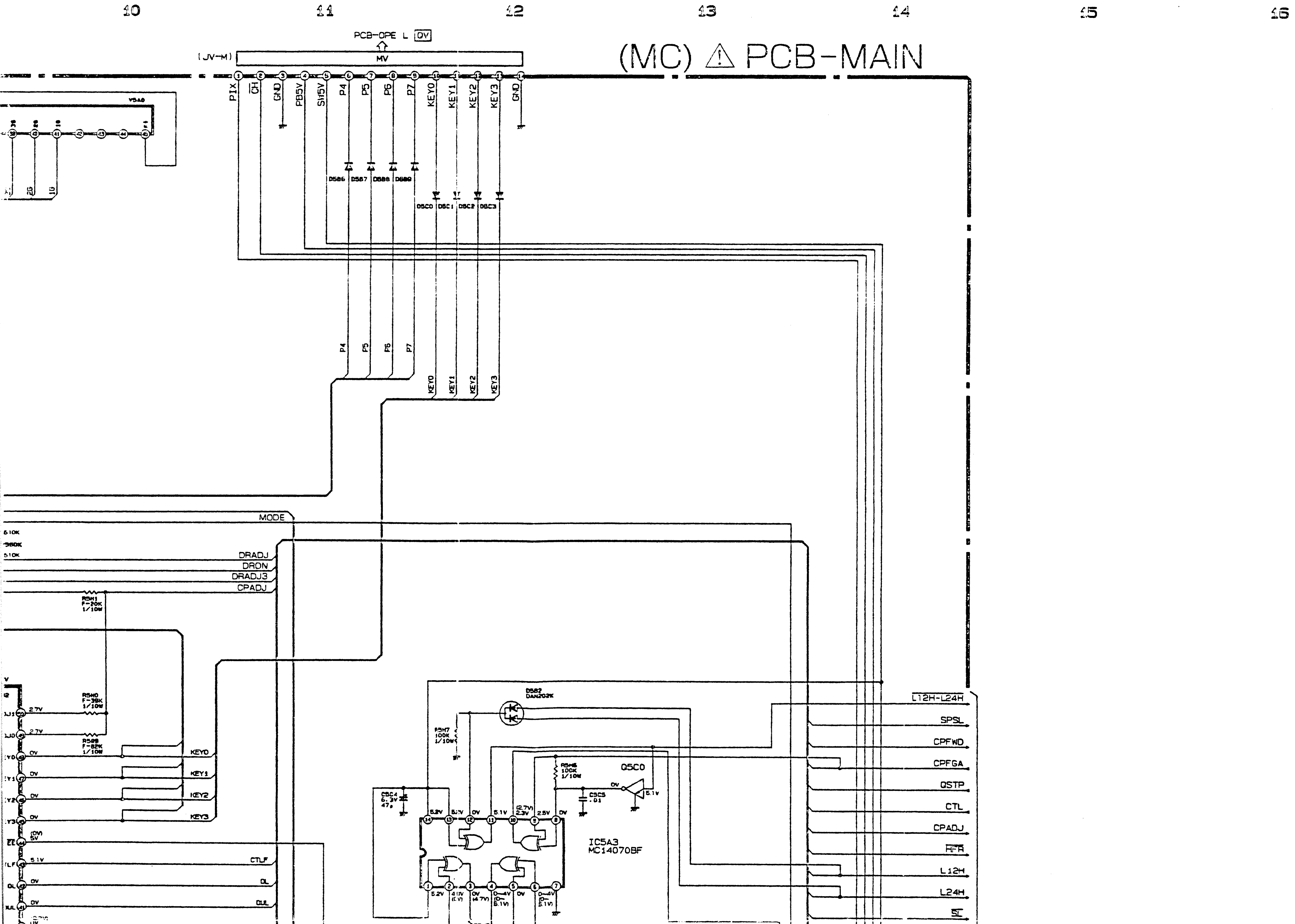
DTC124EK/UN2212

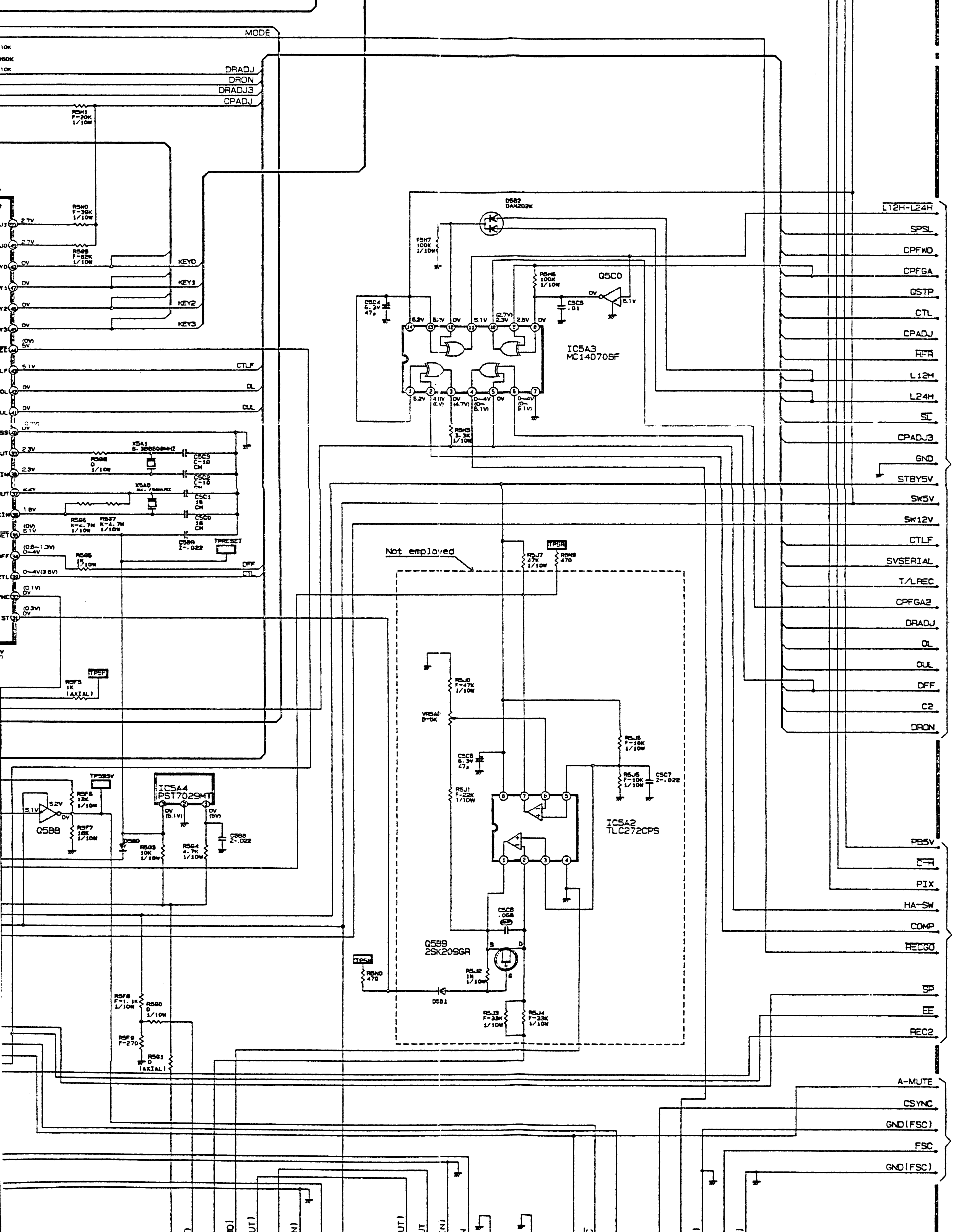

shows
22K
22K

DTA124EK/UN2112

IC5A4 PST7029MT

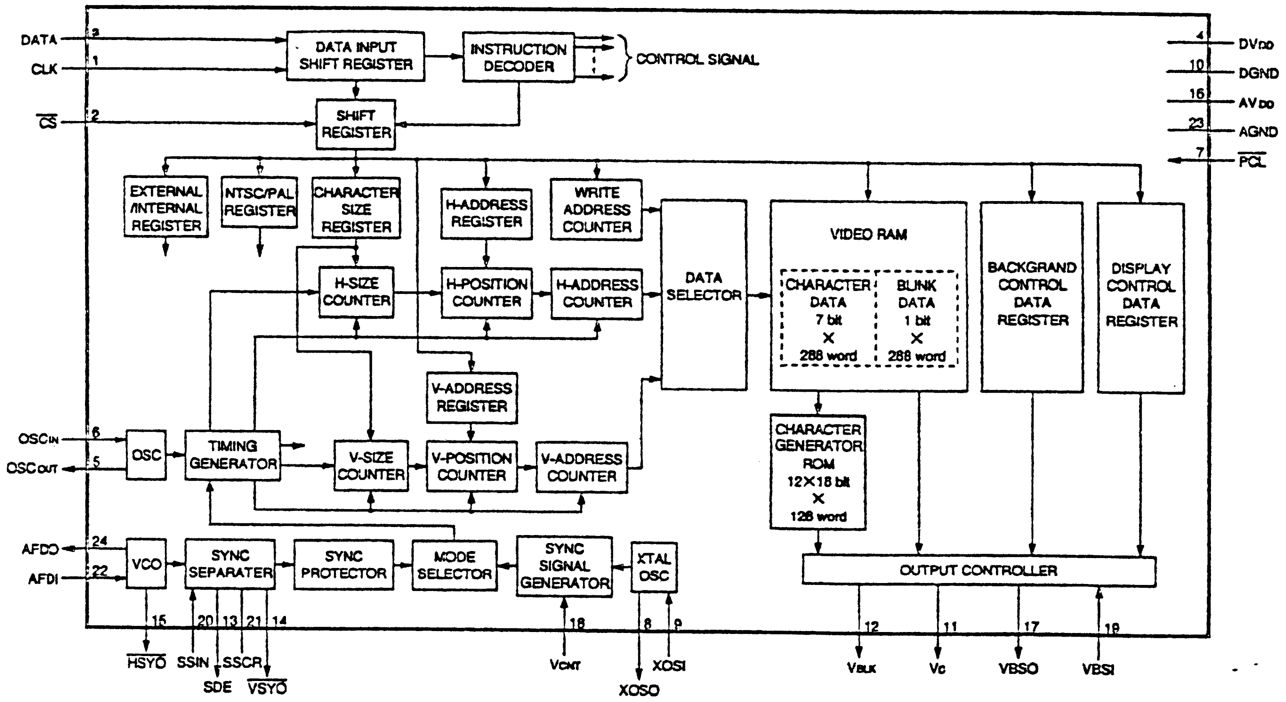

1
Vcc
3
V OUT
2
GND
COL
OP1

10
11
12
13
14
15
16
PCB-OPE L
QV
(JV-M)
MV
(MC) ⚠ PCB-MAIN
P1X
CH
GND
PB5V
SH5V
P4
P5
P6
P7
KEY0
KEY1
KEY2
KEY3
GND
D586
D587
D588
D589
D5C0
D5C1
D5C2
D5C3
MODE
DRADJ
DRON
DRADJ3
CPADJ
R5H1
F-20K
1/10W
R5H0
F-39K
1/10W
R589
F-82K
1/10W
2.7V
0V
(0V)
5V
5.1V
KEY0
KEY1
KEY2
KEY3
CTLF
DL
DUL
D582
DAN202K
R5H7
100K
1/10W
R5H6
100K
1/10W
Q5C0
C5C4
6.3V
47μ
C5C5
.01
5.2V
5.1V
0V
(2.7V)
2.3V
2.5V
IC5A3
MC14070BF
4.1V
(4.7V)
0—4V
(0—5.1V)
L12H-L24H
SPSL
CPFWD
CPFGA
QSTP
CTL
CPADJ
HFR
L12H
L24H
SL

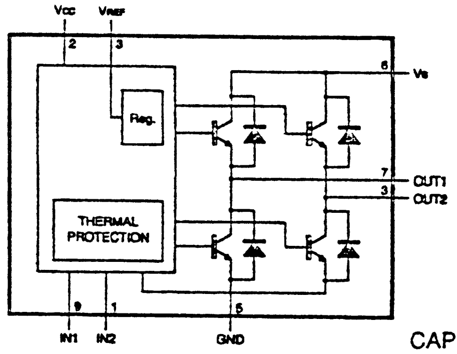

MODE
DRADJ
DRON
DRADJ3
CPADJ
KEY0
KEY1
KEY2
KEY3
CTLF
DL
DUL
DFF
CTL
IC5A3
MC14070BF
Q5C0
D5B2
DAN202K
IC5A4
PST7029MT
Q588
Not employed
IC5A2
TLC272CPS
Q589
2SK209GR
X5A1
X5A0
TPRESET
TP5F
TP5B5V
L12H-L24H
SPSL
CPFWD
CPFGA
QSTP
CTL
CPADJ
RFR
L12H
L24H
SL
CPADJ3
GND
STBY5V
SW5V
SW12V
CTLF
SVSERIAL
T/LREC
CPFGA2
DRADJ
DL
DUL
DFF
C2
DRON
TO SERVO
PB5V
C-H
PIX
HA-SW
COMP
RECGO
TO HEAD-AMP
SP
EE
REC2
A-MUTE
CSYNC
GND(FSC)
FSC
GND(FSC)
TO SERVO

[IC-BLOCK DIAGRAMS (SERVO)(C/G)]

IC2001 µPD6458GT-101

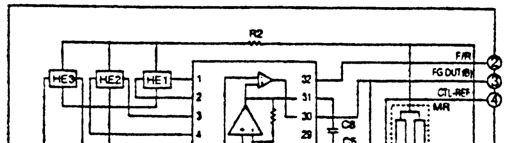

DATA
CLK
CS
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
SHIFT REGISTER
EXTERNAL /INTERNAL REGISTER
NTSC/PAL REGISTER
CHARACTER SIZE REGISTER
H-ADDRESS REGISTER
WRITE ADDRESS COUNTER
H-SIZE COUNTER
H-POSITION COUNTER
H-ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARACTER DATA 7 bit × 288 word
BLINK DATA 1 bit × 288 word
BACKGRAND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
V-ADDRESS REGISTER
OSCIN
OSCOUT
OSC
TIMING GENERATOR
V-SIZE COUNTER
V-POSITION COUNTER
V-ADDRESS COUNTER
CHARACTER GENERATOR ROM 12×18 bit × 128 word
AFDO
AFDI
VCO
SYNC SEPARATER
SYNC PROTECTOR
MODE SELECTOR
SYNC SIGNAL GENERATOR
XTAL OSC
OUTPUT CONTROLLER
DVDD
DGND
AVDD
AGND
PCL
HSYO
SSIN
SSCR
SDE
VSYO
VCNT
XOSO
XOSI
VBLK
VC
VBSO
VBSI

IC4A2 TA7291S

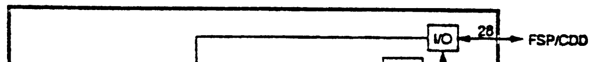

VCC
VREF
Reg.
THERMAL PROTECTION
VS
OUT1
OUT2
IN1
IN2
GND

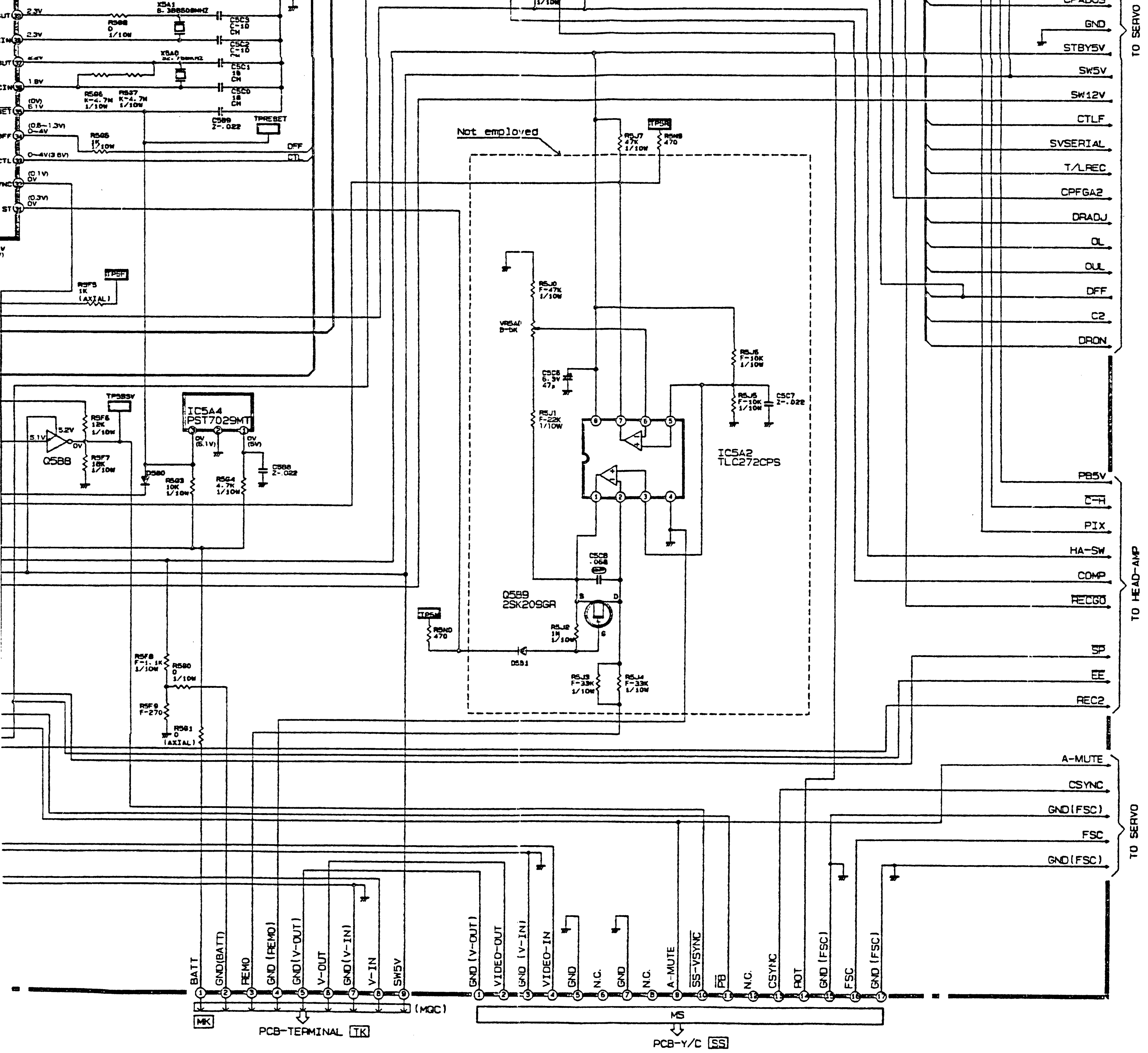
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

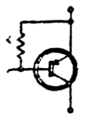
CAPSTAN MOTOR


R2
HE3
HE2
HE1
FR
FG OUT
CTL-REF
MR

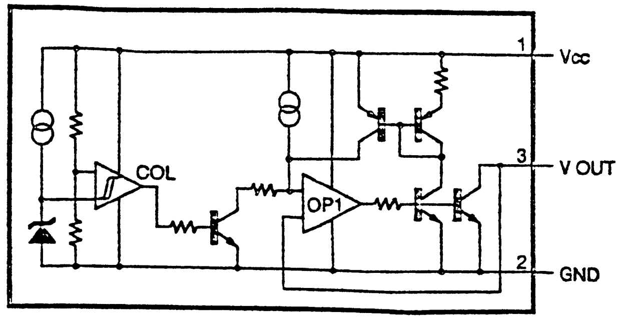
IC4A0 MN67492MTB5




GND
STBY5V
SW5V
SW12V
CTLF
SVSERIAL
T/LREC
CPFGA2
DRADJ
OL
OUL
DFF
C2
DRON
TO SERVO
PB5V
C-H
PIX
HA-SW
COMP
RECGO
TO HEAD-AMP
SP
EE
REC2
A-MUTE
CSYNC
GND(FSC)
FSC
GND(FSC)
TO SERVO
Not employed
IC5A4
PST7029MT
IC5A2
TLC272CPS
Q589
2SK209GR
Q588
D581
D580
BATT
GND(BATT)
REMO
GND(REMO)
GND(V-OUT)
V-OUT
GND(V-IN)
V-IN
SW5V
(MQC)
MK
PCB-TERMINAL TK
GND(V-OUT)
VIDEO-OUT
GND(V-IN)
VIDEO-IN
GND
N.C.
GND
N.C.
A-MUTE
SS-VSYNC
PB
N.C.
CSYNC
ROT
GND(FSC)
FSC
GND(FSC)
MS
PCB-Y/C SS

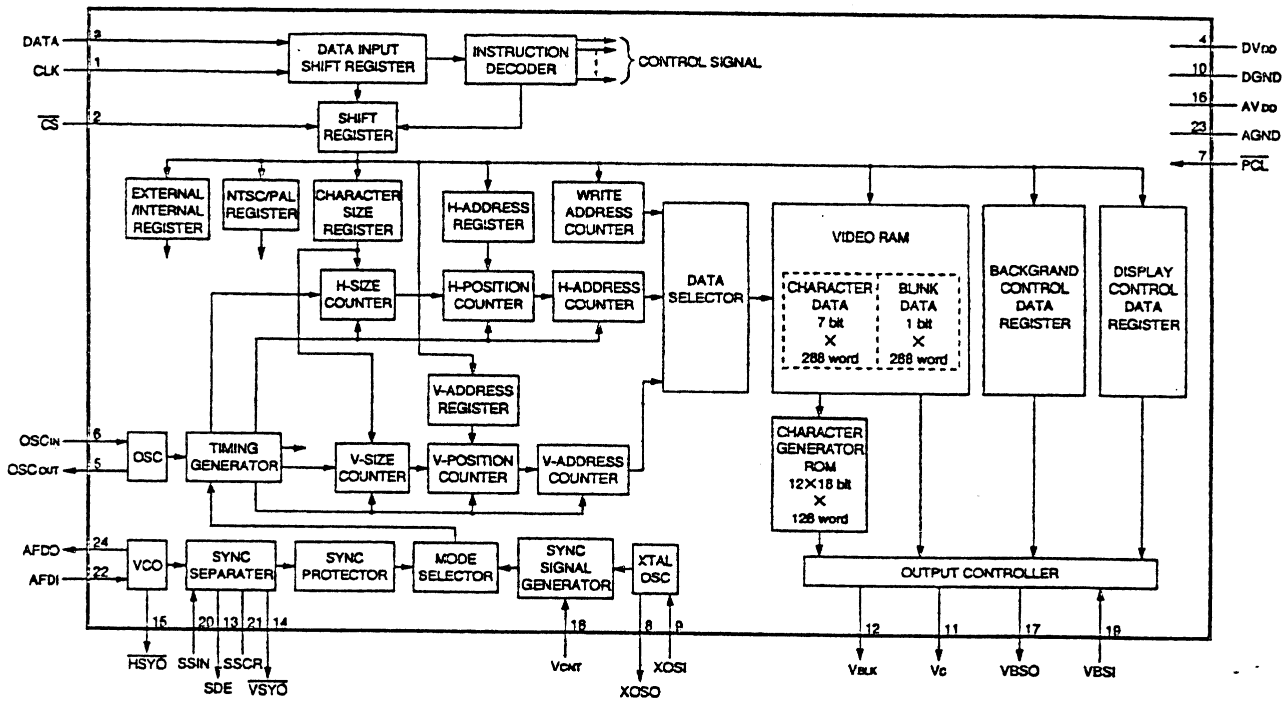


IC5A4 PST7029MT

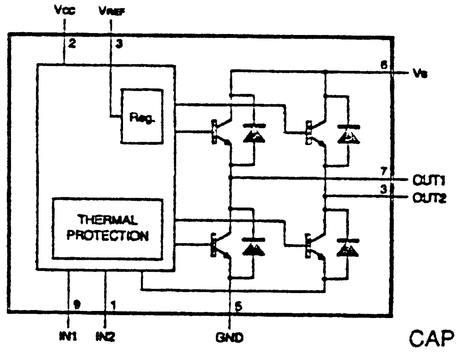

1
Vcc
COL
OP1
3
V OUT
2
GND

[IC-BLOCK DIAGRAMS (SERVO)(C/G)]

IC2001 μPD6458GT-101

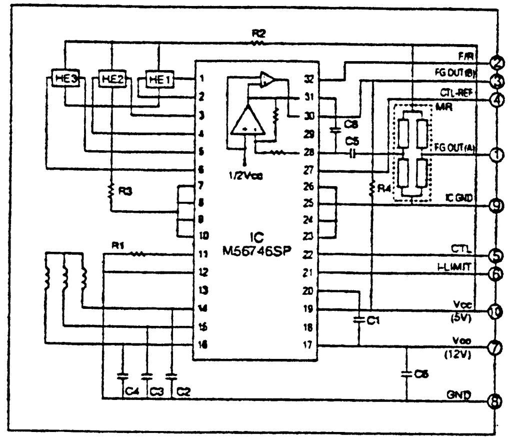

DATA
CLK
CS
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
SHIFT REGISTER
EXTERNAL /INTERNAL REGISTER
NTSC/PAL REGISTER
CHARACTER SIZE REGISTER
H-ADDRESS REGISTER
WRITE ADDRESS COUNTER
H-SIZE COUNTER
H-POSITION COUNTER
H-ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARACTER DATA 7 bit × 288 word
BLINK DATA 1 bit × 288 word
BACKGRAND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
V-ADDRESS REGISTER
OSCIN
OSCOUT
OSC
TIMING GENERATOR
V-SIZE COUNTER
V-POSITION COUNTER
V-ADDRESS COUNTER
CHARACTER GENERATOR ROM 12×18 bit × 128 word
AFDO
AFDI
VCO
SYNC SEPARATER
SYNC PROTECTOR
MODE SELECTOR
SYNC SIGNAL GENERATOR
XTAL OSC
OUTPUT CONTROLLER
DVDD
DGND
AVDD
AGND
PCL
HSYO
SSIN
SDE
SSCR
VSYO
VCNT
XOSO
XOSI
VBLK
Vc
VBSO
VBSI

IC4A2 TA7291S

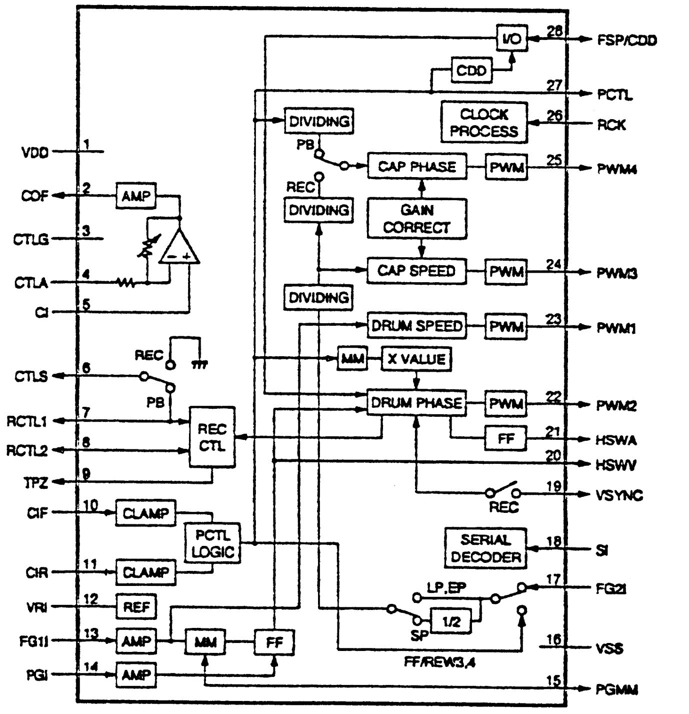

Vcc
VREF
Reg.
THERMAL PROTECTION
Vs
OUT1
OUT2
IN1
IN2
GND

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

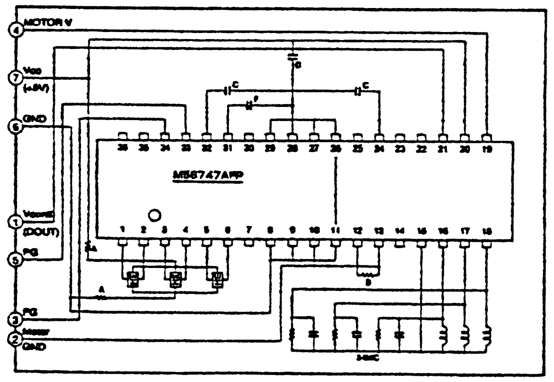
CAPSTAN MOTOR


R2
HE3
HE2
HE1
1/2Vcc
R3
R4
R1
IC M56746SP
C1
C2
C3
C4
C5
C6
F/R
FG OUT(B)
CL-REF
MR
FG OUT(A)
IC GND
CTL
I-LIMIT
Vcc (5V)
Vcc (12V)
GND

IC4A0 MN67492MTB5


VDD
COF
CTLG
CTLA
CI
CTLS
RCTL1
RCTL2
TPZ
CIF
CIR
VRI
FG1I
PGI
AMP
I/O
CDD
DIVIDING
CLOCK PROCESS
CAP PHASE
PWM
GAIN CORRECT
CAP SPEED
DRUM SPEED
MM
X VALUE
DRUM PHASE
FF
REC CTL
CLAMP
PCTL LOGIC
SERIAL DECODER
REF
LP,EP
SP
1/2
FF/REW3,4
REC
PB
FSP/CDD
PCTL
RCK
PWM4
PWM3
PWM1
PWM2
HSWA
HSWV
VSYNC
SI
FG2I
VSS
PGMM

DRUM MOTOR

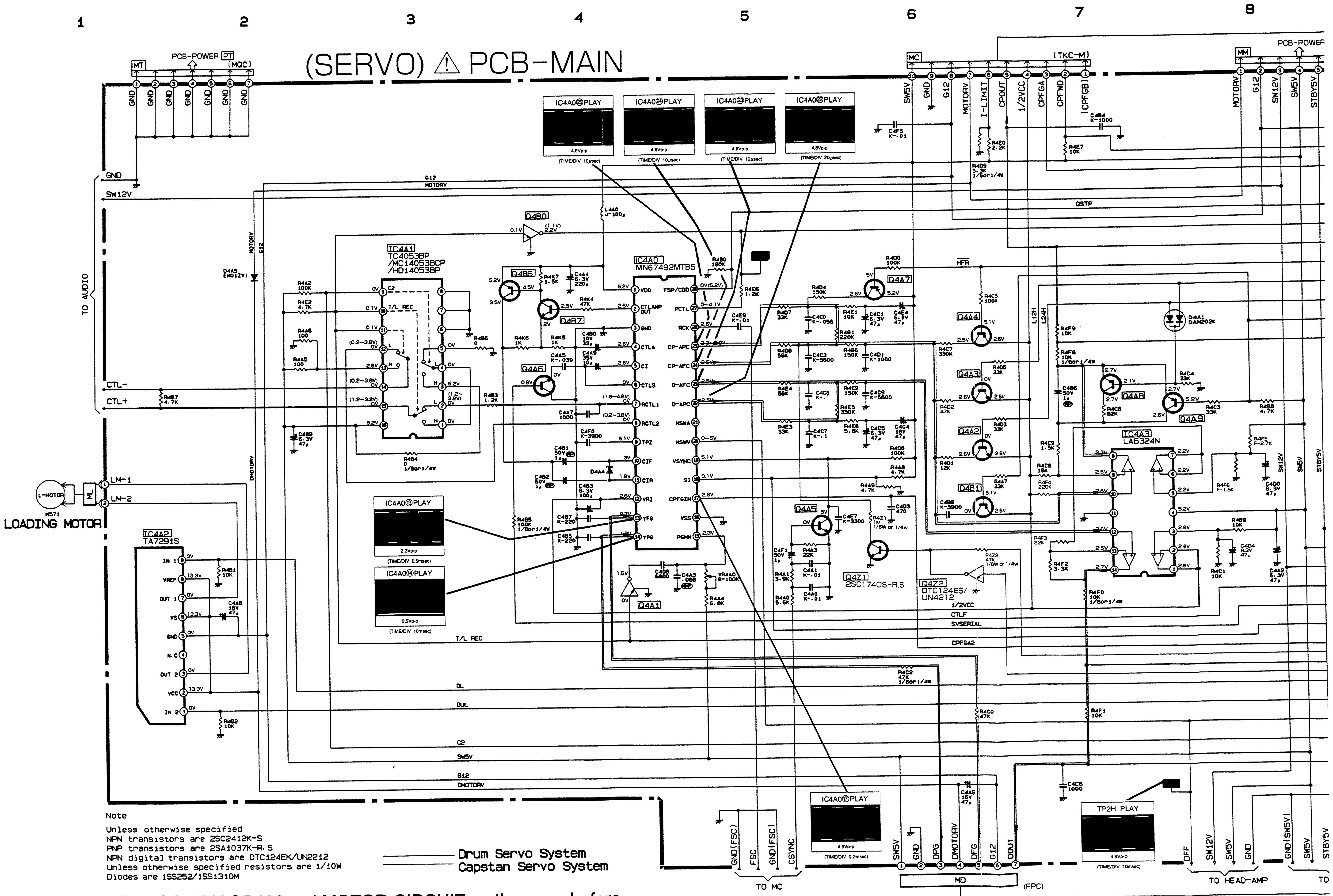

MOTOR V
Vcc (+5V)
GND
Vpos (DOUT)
PG
PG
Motor
GND
M56747AFP

2

3

4

(SERVO) ⚠ PCB-MAIN



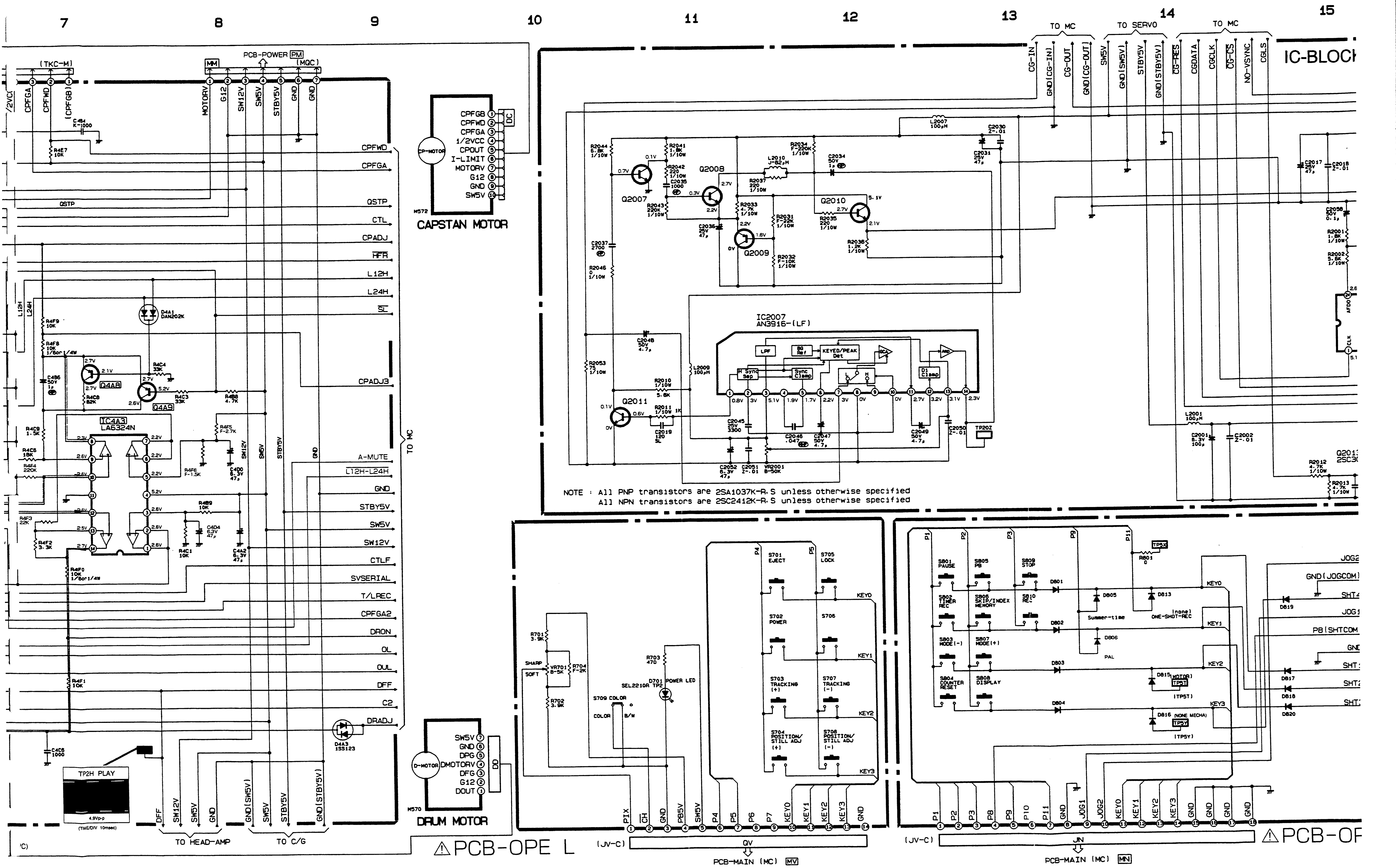
1
2
3
4
5
6
7
8
A
B
C
D
E
MT
PCB-POWER PT
(MQC)
GND
SW12V
TO AUDIO
CTL-
CTL+
LM-1
LM-2
L-MOTOR
ML
M571
LOADING MOTOR
TC4A2
TA7291S
IN 1
VREF
OUT 1
VS
GND
N.C
OUT 2
VCC
IN 2
TC4A1
TC4053BP
/MC14053BCP
/HD14053BP
T/L REC
IC4A0
MN67492MTB5
VDD
CTLAMP OUT
GND
CTLA
CI
CTLS
RCTL1
RCTL2
TPZ
CIF
CIR
VRI
YFG
YPG
FSP/CDD
PCTL
RCK
CP-APC
CP-AFC
D-AFC
D-APC
HSWA
HSWV
VSYNC
SI
CPFGIN
VSS
PGMM
Q4B0
Q4B6
Q4B7
Q4A6
Q4A7
Q4A4
Q4A3
Q4A2
Q4B1
Q4A5
Q4A1
Q4Z1
2SC1740S-R.S
Q4Z2
DTC124ES/
UN4212
Q4A8
Q4A9
IC4A3
LA6324N
D4A1
DAN202K
D4A5
EN01ZVi
IC4A0㉖PLAY
IC4A0㉔PLAY
IC4A0㉓PLAY
IC4A0㉒PLAY
IC4A0⑬PLAY
IC4A0⑭PLAY
IC4A0⑰PLAY
TP2H PLAY
MC
(TKC-M)
SW5V
GND
G12
MOTORV
I-LIMIT
CPOUT
1/2VCC
CPFGA
CPFWD
(CPFGB)
MM
PCB-POWER
SW12V
STBY5V
CSTP
HFR
L12H
L24H
1/2VCC
CTLF
SVSERIAL
CPFGA2
T/L REC
DL
DUL
C2
SW5V
G12
DMOTORV
GND(FSC)
FSC
CSYNC
TO MC
DPG
DFG
DOUT
MD
(FPC)
DFF
TO HEAD-AMP
GND(SW5V)
TO

Note

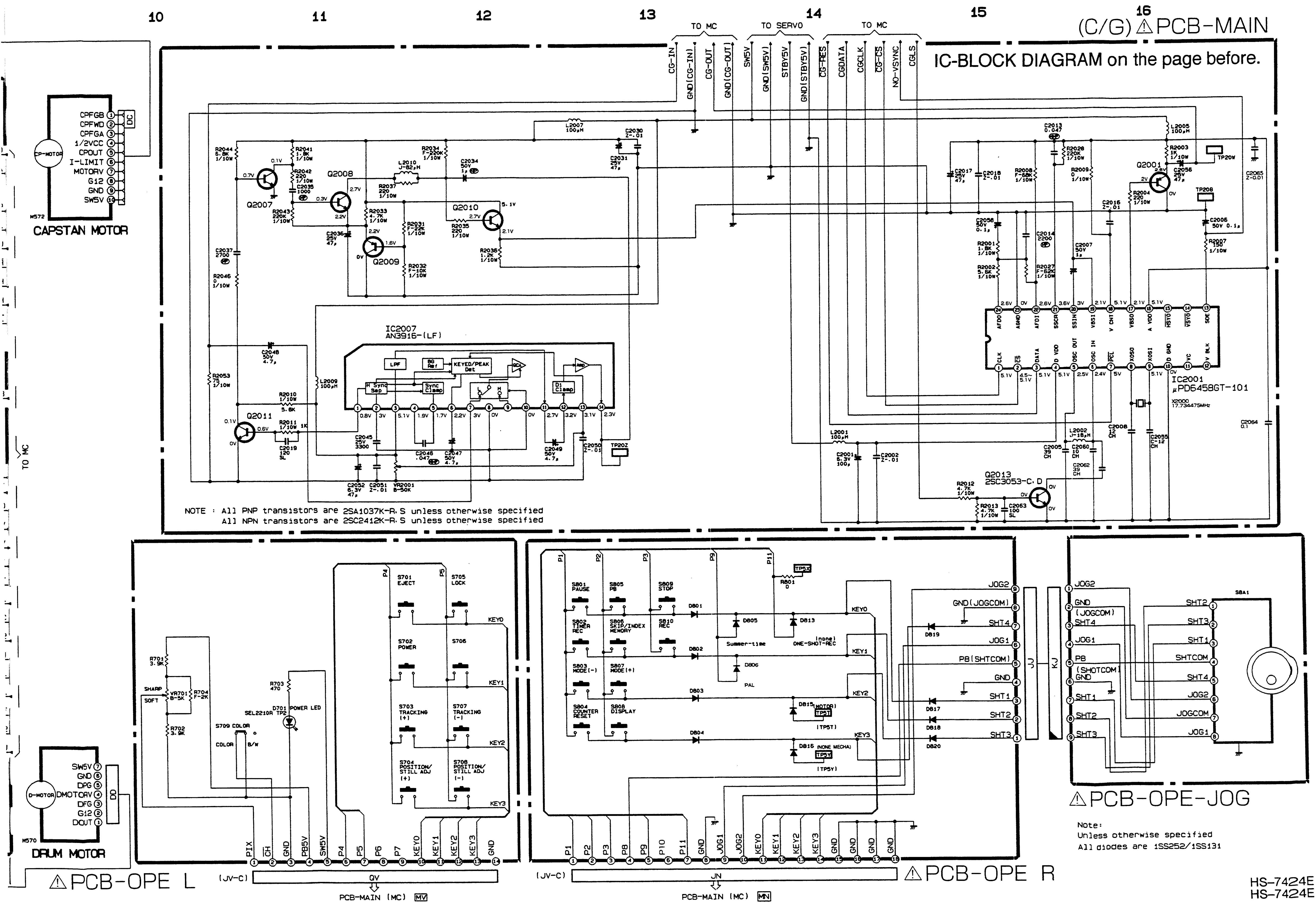
Unless otherwise specified
NPN transistors are 2SC2412K-S
PNP transistors are 2SA1037K-R·S
NPN digital transistors are DTC124EK/UN2212
Unless otherwise specified resistors are 1/10W
Diodes are 1SS252/1SS1310M

—— Drum Servo System
—— Capstan Servo System

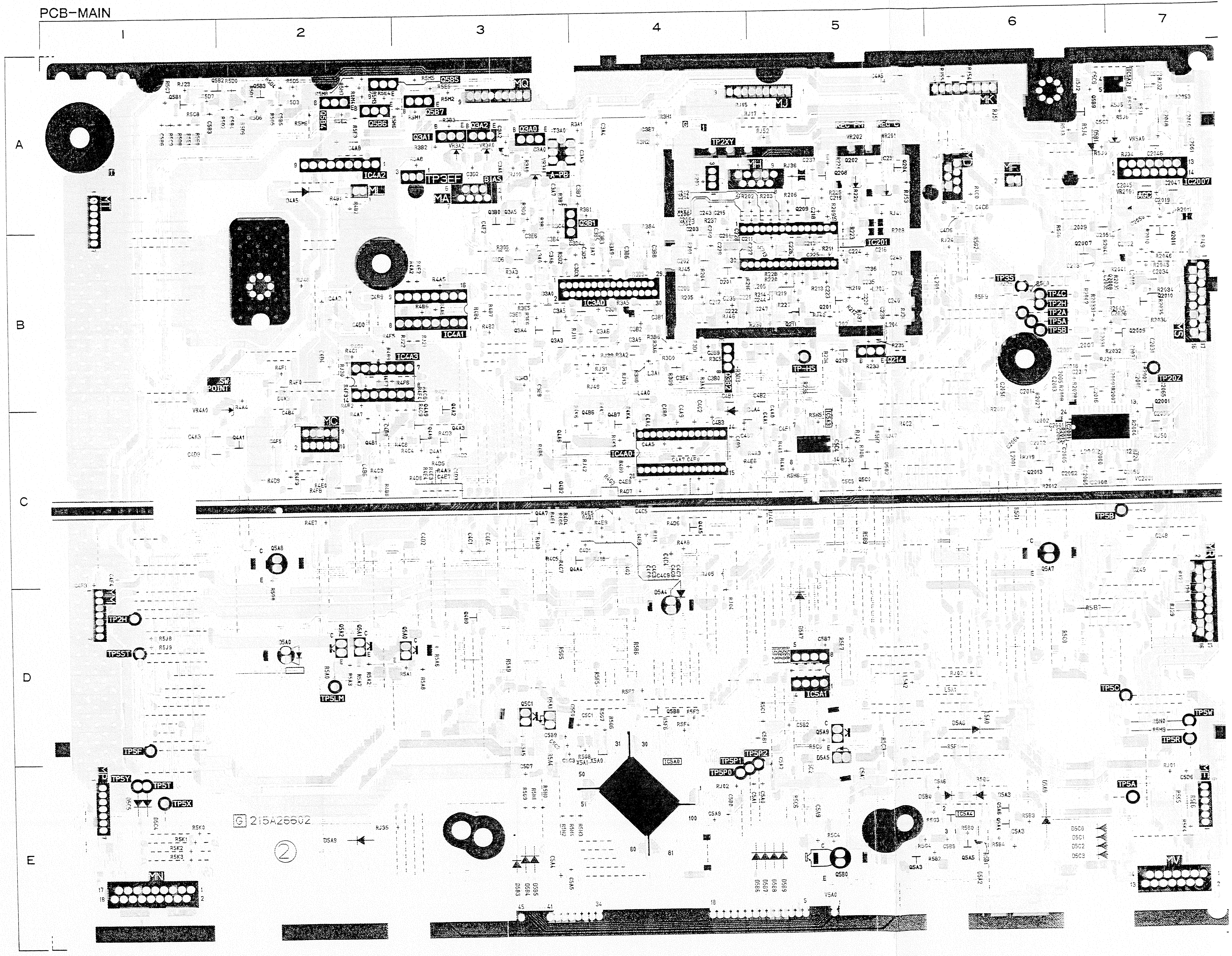
IC-BLOCK DIAGRAM and MOTOR-CIRCUIT on the page before .


7
8
9
10
11
12
13
14
15
(TKC-M)
PCB-POWER PM
MM
(MQC)
CPFGA
CPFWD
(CPFGB)
MOTORV
G12
SW12V
SW5V
STBY5V
GND
C4A4 K-1000
R4E7 10K
CPFWD
CPFGA
QSTP
CTL
CPADJ
HFR
L12H
L24H
SL
CPADJ3
A-MUTE
L12H-L24H
GND
STBY5V
SW5V
SW12V
CTLF
SVSERIAL
T/LREC
CPFGA2
DRON
OL
OUL
DFF
C2
DRADJ
TO MC
D4A1 DAN202K
Q4A8
Q4A9
IC4A3 LA6324N
D4A3 1SS123
TP2H PLAY
4.9Vp-p
(TIME/DIV 10msec)
DFF
SW12V
SW5V
GND
GND(SW5V)
SW5V
STBY5V
GND(STBY5V)
TO HEAD-AMP
TO C/G
CPFGB
CPFWD
CPFGA
1/2VCC
CPOUT
I-LIMIT
MOTORV
G12
GND
SW5V
DC
CP-MOTOR
M572
CAPSTAN MOTOR
SW5V
GND
DPG
DMOTORV
DFG
G12
DOUT
DD
D-MOTOR
M570
DRUM MOTOR
PCB-OPE L
TO MC
TO SERVO
TO MC
CG-IN
GND(CG-IN)
CG-OUT
GND(CG-OUT)
SW5V
GND(SW5V)
STBY5V
GND(STBY5V)
CG-RES
CGDATA
CGCLK
CG-CS
NO-VSYNC
CGLS
IC-BLOCK
Q2007
Q2008
Q2009
Q2010
Q2011
L2007 100μH
L2010 J-82μH
L2009 100μH
L2001 100μH
IC2007 AN3916-(LF)
LPF
BG Ref
KEYED/PEAK Det
H Sync Sep
Sync Clamp
DC Clamp
AMP
TP2O2
VR2001 B-50K
Q2013 2SC3
S701 EJECT
S705 LOCK
S702 POWER
S706
S703 TRACKING (+)
S707 TRACKING (-)
S704 POSITION/STILL ADJ (+)
S708 POSITION/STILL ADJ (-)
S709 COLOR
COLOR
B/W
SHARP
SOFT
VR701 B-5K
R701 3.9K
R702 3.9K
R704 F-2K
R703 470
D701 POWER LED SEL2210R TP2
KEY0
KEY1
KEY2
KEY3
PIX
CH
GND
PB5V
SW5V
P4
P5
P6
P7
(JV-C)
QV
PCB-MAIN (MC) MV
S801 PAUSE
S805 PB
S809 STOP
S802 TIMER REC
S806 SKIP/INDEX MEMORY
S810 REC
S803 MODE(-)
S807 MODE(+)
S804 COUNTER RESET
S808 DISPLAY
D801
D802
D803
D804
D805
D806
D813
D815 (MOTOR)
D816 (NONE MECHA)
Summer-time
PAL
(none) ONE-SHOT-REC
TP5X
TP5T
TP5Y
R801 0
D817
D818
D819
D820
JOG2
GND(JOGCOM)
SHT4
JOG1
PB(SHTCOM)
GND
P1
P2
P3
P8
P9
P10
P11
GND
JOG1
JOG2
KEY0
KEY1
KEY2
KEY3
GND
JN
PCB-MAIN (MC) MN
PCB-OP

NOTE : All PNP transistors are 2SA1037K-R,S unless otherwise specified
All NPN transistors are 2SC2412K-R,S unless otherwise specified

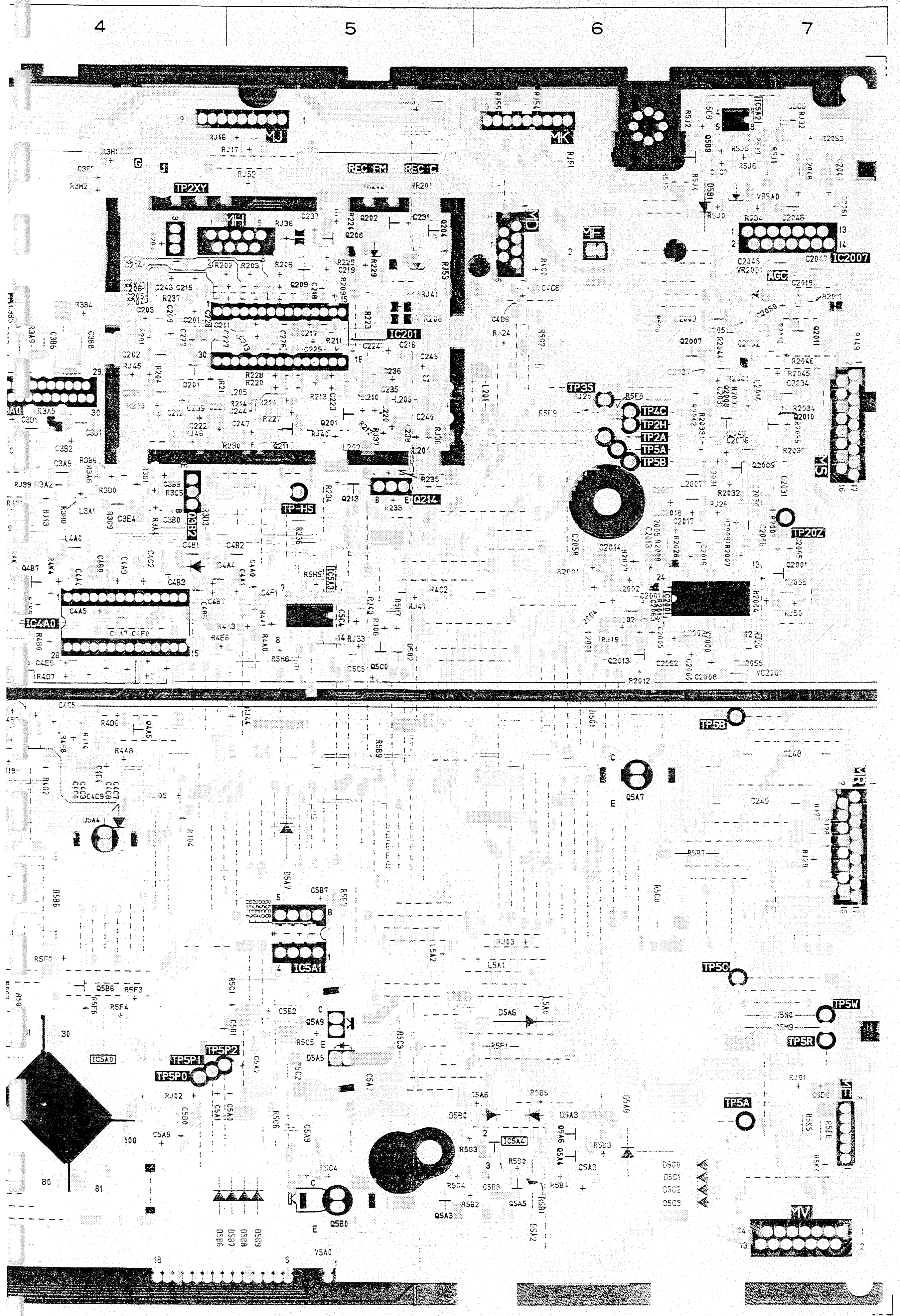

10
11
12
13
14
15
16
(C/G) ⚠PCB-MAIN
TO MC
TO SERVO
TO MC
CG-IN
GND(CG-IN)
CG-OUT
GND(CG-OUT)
SW5V
GND(SW5V)
STBY5V
GND(STBY5V)
CG-RES
CGDATA
CGCLK
CG-CS
NO-VSYNC
CGLS
IC-BLOCK DIAGRAM on the page before.
CPFGB ①
CPFWD ②
CPFGA ③
1/2VCC ④
CPOUT ⑤
I-LIMIT ⑥
MOTORV ⑦
G12 ⑧
GND ⑨
SW5V ⑩
DC
CP-MOTOR
M572
CAPSTAN MOTOR
Q2007
Q2008
Q2009
Q2010
Q2011
Q2001
Q2013
2SC3053-C, D
IC2007
AN3916-(LF)
LPF
BG Ref
KEYED/PEAK Det
H Sync Sep
Sync Clamp
Dl Clamp
Amp
IC2001
μPD6458GT-101
X2000
17.734475MHz
AFDO
AGND
AFDI
SSCR
SSIN
VBSI
V CNT
VBSO
A VDD
NSVD
VSYO
SOE
CLK
CS
DATA
D VDD
OSC OUT
OSC IN
PCL
XOSO
XOSI
D GND
VC
V BLK
TP20W
TP20B
TP20Z
L2005 100μH
L2007 100μH
L2009 100μH
L2010 J-82μH
L2001 100μH
L2002 J-18μH
VR2001 B-50K
NOTE : All PNP transistors are 2SA1037K-R, S unless otherwise specified
All NPN transistors are 2SC2412K-R, S unless otherwise specified
S701 EJECT
S702 POWER
S703 TRACKING (+)
S704 POSITION/STILL ADJ (+)
S705 LOCK
S706
S707 TRACKING (-)
S708 POSITION/STILL ADJ (-)
S709 COLOR
COLOR
B/W
KEY0
KEY1
KEY2
KEY3
P4
P5
R701 3.9K
R702 3.9K
R703 470
R704 F-2K
VR701 B-5K
SHARP
SOFT
D701 POWER LED
SEL2210R TP2
SW5V ⑦
GND ⑥
DPG ⑤
DMOTORV ④
DFG ③
G12 ②
DOUT ①
DD
D-MOTOR
M570
DRUM MOTOR
PIX
CH
GND
PB5V
SW5V
P4
P5
P6
P7
KEY0
KEY1
KEY2
KEY3
GND
⚠PCB-OPE L
(JV-C)
QV
PCB-MAIN (MC) MV
S801 PAUSE
S802 TIMER REC
S803 MODE(-)
S804 COUNTER RESET
S805 PB
S806 SKIP/INDEX MEMORY
S807 MODE(+)
S808 DISPLAY
S809 STOP
S810 REC
D801
D802
D803
D804
D805
D806
D813
D815
D816
D817
D818
D819
D820
Summer-time
PAL
(none) ONE-SHOT-REC
(MOTOR) TP5T
(TP5T)
(NONE MECHA) TP5Y
(TP5Y)
TP5X
R801 0
P1
P2
P3
P9
P11
JOG2 ⑨
GND(JOGCOM) ⑧
SHT4 ⑦
JOG1 ⑥
PB(SHTCOM) ⑤
GND ④
SHT1 ③
SHT2 ②
SHT3 ①
JJ
KJ
P1
P2
P3
P8
P9
P10
P11
GND
JOG1
JOG2
KEY0
KEY1
KEY2
KEY3
GND
GND
GND
GND
⚠PCB-OPE R
(JV-C)
JN
PCB-MAIN (MC) MN
① JOG2
② GND (JOGCOM)
③ SHT4
④ JOG1
⑤ PB (SHOTCOM)
⑥ GND
⑦ SHT1
⑧ SHT2
⑨ SHT3
S8A1
SHT2 ①
SHT3 ②
SHT1 ③
SHTCOM ④
SHT4 ⑤
JOG2 ⑥
JOGCOM ⑦
JOG1 ⑧
⚠PCB-OPE-JOG
Note:
Unless otherwise specified
All diodes are 1SS252/1SS131

PCB-MAIN


1
2
3
4
5
6
7
A
B
C
D
E
MQ
MJ
MK
MT
MA
MI
MC
MP
MN
MV
MR
IC4A2
IC4A1
IC4A3
IC3A0
IC4A0
IC201
IC2007
IC5A1
IC5A0
IC5A4
TP3EF
TP2XY
TP-HS
TP3S
TP4C
TP2H
TP2A
TP5A
TP5B
TP20Z
TP5LM
TP5ST
TP5F
TP5Y
TP5T
TP5X
TP5P1
TP5P2
TP5P0
TP5C
TP5SW
TP5R
SW POINT
BIAS
A-PB
AGC
G 2I5A25602
②

HS-7424E
HS-7424E(B)

⑥



PCB-MAIN

SYMBOL NO.	ADDRESS
C2001	C—6
C2002	C—6
C2005	C—6
C2006	B—7
C2007	B—6
C2008	C—6
C201	B—4
C2013	C—6
C2014	C—6
C2016	B—6
C2017	B—6
C2018	B—6
C2019	A—7
C202	B—4
C203	B—4
C2030	B—7
C2031	B—7
C2034	B—7
C2035	B—6
C2036	B—7
C2037	B—7
C204	A—5
C2045	A—7
C2046	A—7
C2047	A—7
C2048	A—7
C2049	A—7
C205	A—5
C2050	A—7
C2051	B—7
C2052	B—7
C2055	C—7
C2056	C—7
C2058	C—6
C206	A—5
C2060	C—6
C2061	A—7
C2062	C—6
C2063	C—6
C2064	C—6
C2065	B—7
C207	A—5
C208	B—4
C209	B—4
C210	B—5
C211	B—5
C212	B—4
C213	B—5
C214	A—5
C215	A—4
C216	B—5
C217	B—5
C218	A—5
C219	A—5
C220	B—5
C221	B—4
C222	B—4
C223	B—5
C224	B—5
C225	B—5
C226	B—5
C227	B—4
C228	B—4
C229	B—4
C231	A—5
C235	B—5
C236	B—5
C237	A—5
C238	B—5
C239	B—4
C240	B—5
C242	A—5
C243	A—4
C244	B—5
C245	B—5
C247	B—5
C248	C—7
C249	C—7
C3A0	A—3
C3A1	A—3
C3A2	A—3
C3A3	A—4
C3A4	A—4
C3A5	B—4
C3A6	B—4
C3A7	A—3
C3A8	B—3
C3A9	B—4
C3B0	B—4
C3B1	B—4
C3B2	B—4
C3B3	B—4
C3B4	B—3
C3B5	B—4
C3B6	B—4
C3B7	A—4
C3B8	B—4
C3B9	B—4
C3D1	B—4
C3D2	A—3
C3D3	B—3
C3D4	B—4
C3D5	B—4
C3D6	B—3
C3E4	B—4
C3E6	A—3
C3E7	A—4
C3E8	B—3
C3E9	B—3
C4A0	C—5
C4A1	C—5
C4A2	B—2
C4A3	C—2
C4A4	C—4
C4A5	C—4
C4A6	A—5
C4A7	C—4
C4A8	A—2
C4A9	C—4
C4B0	C—4
C4B1	B—4
C4B2	B—5
C4B3	C—4
C4B4	C—2
C4B5	C—4
C4B6	C—2
C4B7	C—4
C4B8	C—2
C4B9	B—2
C4C0	C—4
C4C1	C—3
C4C2	C—4
C4C3	C—4
C4C4	C—4
C4C5	C—4
C4C6	A—6
C4C7	C—4
C4C8	C—4
C4C9	C—4
C4D0	B—2
C4D1	C—4
C4D2	C—3
C4D3	C—4
C4D4	B—2
C4D6	A—6
C4D8	C—2
C4E4	C—3
C4E7	C—4
C4E9	C—4
C4F0	C—4
C4F1	C—5
C4F2	B—3
C4F3	C—1
C4F4	C—1
C4F5	C—2
C5A0	E—5
C5A1	E—4
C5A2	E—5
C5A3	E—6
C5A4	E—3
C5A5	E—3
C5A6	E—6
C5A7	E—5
C5A8	E—4
C5A9	E—5
C5B0	E—4
C5B1	D—5
C5B2	D—5
C5B3	A—1
C5B4	A—2
C5B5	A—2
C5B6	A—1
C5B7	D—5
C5B8	E—6
C5B9	D—3
C5C0	D—4
C5C1	D—4
C5C2	D—3
C5C3	D—3
C5C4	C—5
C5C5	C—5
C5C6	A—7
C5C7	A—7
C5C8	A—6
C5D6	E—7
C5D7	E—3
D201	B—4
D3A0	B—3
D4A1	C—3
D4A3	B—2
D4A4	C—4
D4A5	A—2
D5A0	D—3
D5A1	D—3
D5A2	E—6
D5A3	E—6
D5A4	D—4
D5A5	E—5
D5A6	D—6
D5A7	C—5
D5A8	E—6
D5A9	E—2
D5B0	E—6
D5B1	A—6
D5B2	C—5
D5B3	E—3
D5B4	E—3
D5B5	E—3
D5B6	E—4
D5B7	E—5
D5B8	E—5
D5B9	E—5
D5C0	E—6
D5C1	E—6
D5C2	E—6
D5C3	E—6
D5C4	E—1
D5C5	E—1
G	A—4
IC2001	C—6
IC2007	A—7
IC201	B—4
IC3A0	B—3
IC4A0	C—4
IC4A1	B—3
IC4A2	A—2
IC4A3	B—2
IC5A0	E—4
IC5A1	D—5
IC5A2	A—7
IC5A3	C—5
IC5A4	E—6
L2001	C—6
L2002	C—6
L2005	B—6
L2007	B—6
L2009	B—7
L201	B—6
L2010	B—7
L202	B—5
L203	B—5
L204	B—5
L205	B—5
L3A0	B—3
L3A1	B—4
L4A0	B—4
L5A0	D—6
L5A1	D—6
L5A2	D—5
MA	A—3
MC	C—2
MD	A—6
ME	E—7
MF	A—6
MH	A—4
MJ	A—5
MK	A—6
ML	A—2
MM	D—1
MN	E—1
MP	E—1
MQ	A—3
MR	C—7
MS	B—7
MT	A—1
MV	E—7
Q2001	C—7
Q2007	B—6
Q2008	B—7
Q2009	B—7
Q201	B—5
Q2010	B—7
Q2011	B—7
Q2013	C—6
Q202	A—5
Q204	A—5
Q208	A—5
Q209	A—5
Q211	B—5
Q213	B—5
Q214	B—5
Q3A0	A—3
Q3A1	A—3
Q3A2	A—3
Q3A3	B—3
Q3A4	B—3
Q3A5	A—3
Q3B0	A—3
Q3B1	A—4
Q3B2	B—4
Q4A1	C—2
Q4A2	C—3
Q4A3	C—3
Q4A4	C—4
Q4A5	C—4
Q4A6	C—3
Q4A7	C—3
Q4A8	C—3
Q4A9	C—3
Q4B0	D—3
Q4B1	C—2
Q4B2	C—3
Q4B6	C—4
Q4B7	C—4
Q5A0	D—2
Q5A1	D—2
Q5A2	D—2
Q5A3	E—5
Q5A4	E—6
Q5A5	E—6
Q5A6	E—6
Q5A7	C—6
Q5A8	C—2
Q5A9	D—5
Q5B0	E—5
Q5B1	A—1
Q5B2	A—2
Q5B3	A—2
Q5B4	A—2
Q5B5	A—3
Q5B6	A—2
Q5B7	A—3
Q5B8	D—4
Q5B9	A—6
Q5C0	C—5
Q5C1	D—3
R2001	C—6
R2002	C—6
R2003	B—7
R2004	C—7
R2007	B—7
R2008	C—6
R2009	B—7
R201	B—4
R2010	B—7
R2011	A—7
R2012	C—6
R2013	C—6
R202	A—5
R2027	C—6
R2028	C—6
R203	A—5
R2031	B—6
R2032	B—7
R2033	B—6
R2034	B—7
R2035	B—7
R2036	B—7
R2037	B—7
R204	B—4
R2041	B—6
R2042	B—6
R2043	B—6
R2044	B—6
R2045	B—7
R2046	B—7
R205	B—4
R2053	A—7
R206	A—5
R207	A—4
R208	B—5
R209	A—5
R210	B—5
R211	B—5
R212	B—5
R213	B—5
R214	B—5
R216	B—4
R219	B—5
R220	B—5
R223	B—5
R224	A—5
R225	A—5
R227	B—5
R228	B—5
R229	A—5
R230	B—5
R233	B—5
R234	B—5
R235	B—5
R236	C—5
R237	A—4
R3A0	A—3
R3A1	A—4
R3A2	B—4
R3A3	B—3
R3A4	B—4
R3A5	B—4
R3A6	B—4
R3A7	B—4
R3A8	A—3
R3A9	B—4
R3B0	A—3
R3B1	A—4
R3B2	A—3
R3B3	A—3
R3B4	B—4
R3B5	B—4
R3B6	B—4
R3B7	A—3
R3C4	B—3
R3C5	B—4
R3D0	B—4
R3D1	B—4
R3D2	B—3
R3D3	B—4
R3E5	B—3
R3E6	B—3
R3G0	A—3
R3G5	B—3
R3G9	B—4
R3H0	B—4
R3H1	A—4
R3H2	A—4
R3H3	B—3
R4A0	C—5
R4A1	C—5
R4A2	B—3
R4A3	C—5
R4A4	B—2
R4A5	B—3
R4A6	B—3
R4A7	C—2
R4A8	C—4
R4A9	C—4
R4B0	C—4
R4B1	A—2
R4B2	A—2
R4B3	B—3
R4B4	B—3
R4B5	C—3
R4B6	B—3
R4B7	B—3
R4B8	C—2
R4B9	B—2
R4C0	A—6
R4C1	B—2
R4C2	C—
R4C3	C—
R4C4	C—
R4C5	C—
R4C6	C—
R4C7	C—
R4C8	C—
R4C9	C—
R4D0	C—
R4D1	B—
R4D2	C—
R4D3	C—
R4D4	C—
R4D5	C—
R4D6	C—
R4D7	C—
R4D8	C—
R4D9	C—
R4E0	C—
R4E1	C—
R4E2	B—
R4E3	C—
R4E4	C—
R4E5	C—
R4E6	C—
R4E7	C—
R4E8	C—
R4E9	C—
R4F0	B—
R4F1	B—
R4F2	B—
R4F3	B—
R4F4	C—
R4F5	B—
R4F6	B—
R4F7	B—
R4F8	C—
R4F9	C—
R4G0	B—
R4G1	C—
R4G2	C—
R4G3	C—
R4G6	C—
R4K4	C—
R4K5	C—
R4K6	C—

SYMBOL NO.	ADDRESS
C240	B—5
C242	A—5
C243	A—4
C244	B—5
C245	B—5
C247	B—5
C248	C—7
C249	C—7
C3A0	A—3
C3A1	A—3
C3A2	A—3
C3A3	A—4
C3A4	A—4
C3A5	B—4
C3A6	B—4
C3A7	A—3
C3A8	B—3
C3A9	B—4
C3B0	B—4
C3B1	B—4
C3B2	B—4
C3B3	B—4
C3B4	B—3
C3B5	B—4
C3B6	B—4
C3B7	A—4
C3B8	B—4
C3B9	B—4
C3D1	B—4
C3D2	A—3
C3D3	B—3
C3D4	B—4
C3D5	B—4
C3D6	B—3
C3E4	B—4
C3E6	A—3
C3E7	A—4
C3E8	B—3
C3E9	B—3
C4A0	C—5
C4A1	C—5
C4A2	B—2
C4A3	C—2
C4A4	C—4
C4A5	C—4
C4A6	A—5
C4A7	C—4
C4A8	A—2
C4A9	C—4
C4B0	C—4
C4B1	B—4
C4B2	B—5
C4B3	C—4
C4B4	C—2
C4B5	C—4
C4B6	C—2
C4B7	C—4
C4B8	C—2
C4B9	B—2
C4C0	C—4
C4C1	C—3
C4C2	C—4
C4C3	C—4
C4C4	C—4
C4C5	C—4
C4C6	A—6
C4C7	C—4
C4C8	C—4
C4C9	C—4
C4D0	B—2

SYMBOL NO.	ADDRESS
C4D1	C—4
C4D2	C—3
C4D3	C—4
C4D4	B—2
C4D6	A—6
C4D8	C—2
C4E4	C—3
C4E7	C—4
C4E9	C—4
C4F0	C—4
C4F1	C—5
C4F2	B—3
C4F3	C—1
C4F4	C—1
C4F5	C—2
C5A0	E—5
C5A1	E—4
C5A2	E—5
C5A3	E—6
C5A4	E—3
C5A5	E—3
C5A6	E—6
C5A7	E—5
C5A8	E—4
C5A9	E—5
C5B0	E—4
C5B1	D—5
C5B2	D—5
C5B3	A—1
C5B4	A—2
C5B5	A—2
C5B6	A—1
C5B7	D—5
C5B8	E—6
C5B9	D—3
C5C0	D—4
C5C1	D—4
C5C2	D—3
C5C3	D—3
C5C4	C—5
C5C5	C—5
C5C6	A—7
C5C7	A—7
C5C8	A—6
C5D6	E—7
C5D7	E—3
D201	B—4
D3A0	B—3
D4A1	C—3
D4A3	B—2
D4A4	C—4
D4A5	A—2
D5A0	D—3
D5A1	D—3
D5A2	E—6
D5A3	E—6
D5A4	D—4
D5A5	E—5
D5A6	D—6
D5A7	C—5
D5A8	E—6
D5A9	E—2
D5B0	E—6
D5B1	A—6
D5B2	C—5
D5B3	E—3
D5B4	E—3
D5B5	E—3
D5B6	E—4

SYMBOL NO.	ADDRESS
D5B7	E—5
D5B8	E—5
D5B9	E—5
D5C0	E—6
D5C1	E—6
D5C2	E—6
D5C3	E—6
D5C4	E—1
D5C5	E—1
G	A—4
IC2001	C—6
IC2007	A—7
IC201	B—4
IC3A0	B—3
IC4A0	C—4
IC4A1	B—3
IC4A2	A—2
IC4A3	B—2
IC5A0	E—4
IC5A1	D—5
IC5A2	A—7
IC5A3	C—5
IC5A4	E—6
L2001	C—6
L2002	C—6
L2005	B—6
L2007	B—6
L2009	B—7
L201	B—6
L2010	B—7
L202	B—5
L203	B—5
L204	B—5
L205	B—5
L3A0	B—3
L3A1	B—4
L4A0	B—4
L5A0	D—6
L5A1	D—6
L5A2	D—5
MA	A—3
MC	C—2
MD	A—6
ME	E—7
MF	A—6
MH	A—4
MJ	A—5
MK	A—6
ML	A—2
MM	D—1
MN	E—1
MP	E—1
MQ	A—3
MR	C—7
MS	B—7
MT	A—1
MV	E—7
Q2001	C—7
Q2007	B—6
Q2008	B—7
Q2009	B—7
Q201	B—5
Q2010	B—7
Q2011	B—7
Q2013	C—6

SYMBOL NO.	ADDRESS
Q202	A—5
Q204	A—5
Q208	A—5
Q209	A—5
Q211	B—5
Q213	B—5
Q214	B—5
Q3A0	A—3
Q3A1	A—3
Q3A2	A—3
Q3A3	B—3
Q3A4	B—3
Q3A5	A—3
Q3B0	A—3
Q3B1	A—4
Q3B2	B—4
Q4A1	C—2
Q4A2	C—3
Q4A3	C—3
Q4A4	C—4
Q4A5	C—4
Q4A6	C—3
Q4A7	C—3
Q4A8	C—3
Q4A9	C—3
Q4B0	D—3
Q4B1	C—2
Q4B2	C—3
Q4B6	C—4
Q4B7	C—4
Q5A0	D—2
Q5A1	D—2
Q5A2	D—2
Q5A3	E—5
Q5A4	E—6
Q5A5	E—6
Q5A6	E—6
Q5A7	C—6
Q5A8	C—2
Q5A9	D—5
Q5B0	E—5
Q5B1	A—1
Q5B2	A—2
Q5B3	A—2
Q5B4	A—2
Q5B5	A—3
Q5B6	A—2
Q5B7	A—3
Q5B8	D—4
Q5B9	A—6
Q5C0	C—5
Q5C1	D—3
R2001	C—6
R2002	C—6
R2003	B—7
R2004	C—7
R2007	B—7
R2008	C—6
R2009	B—7
R201	B—4
R2010	B—7
R2011	A—7
R2012	C—6
R2013	C—6
R202	A—5
R2027	C—6
R2028	C—6
R203	A—5
R2031	B—6

SYMBOL NO.	ADDRESS
R2032	B—7
R2033	B—6
R2034	B—7
R2035	B—7
R2036	B—7
R2037	B—7
R204	B—4
R2041	B—6
R2042	B—6
R2043	B—6
R2044	B—6
R2045	B—7
R2046	B—7
R205	B—4
R2053	A—7
R206	A—5
R207	A—4
R208	B—5
R209	A—5
R210	B—5
R211	B—5
R212	B—5
R213	B—5
R214	B—5
R216	B—4
R219	B—5
R220	B—5
R223	B—5
R224	A—5
R225	A—5
R227	B—5
R228	B—5
R229	A—5
R230	B—5
R233	B—5
R234	B—5
R235	B—5
R236	C—5
R237	A—4
R3A0	A—3
R3A1	A—4
R3A2	B—4
R3A3	B—3
R3A4	B—4
R3A5	B—4
R3A6	B—4
R3A7	B—4
R3A8	A—3
R3A9	B—4
R3B0	A—3
R3B1	A—4
R3B2	A—3
R3B3	A—3
R3B4	B—4
R3B5	B—4
R3B6	B—4
R3B7	A—3
R3C4	B—3
R3C5	B—4
R3D0	B—4
R3D1	B—4
R3D2	B—3
R3D3	B—4
R3E5	B—3
R3E6	B—3
R3G0	A—3
R3G5	B—3
R3G9	B—4
R3H0	B—4
R3H1	A—4

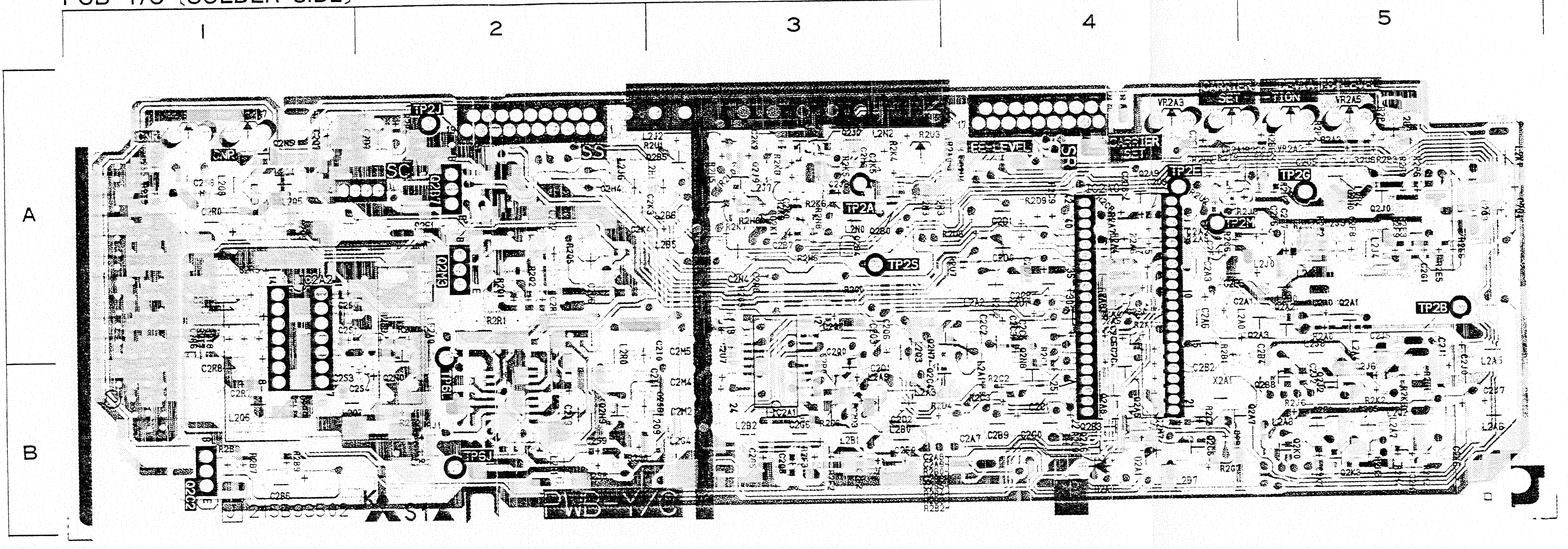
SYMBOL NO.	ADDRESS
R3H2	A—4
R3H3	B—3
R4A0	C—5
R4A1	C—5
R4A2	B—3
R4A3	C—5
R4A4	B—2
R4A5	B—3
R4A6	B—3
R4A7	C—2
R4A8	C—4
R4A9	C—4
R4B0	C—4
R4B1	A—2
R4B2	A—2
R4B3	B—3
R4B4	B—3
R4B5	C—3
R4B6	B—3
R4B7	B—3
R4B8	C—2
R4B9	B—2
R4C0	A—6
R4C1	B—2
R4C2	C—6
R4C3	C—2
R4C4	C—3
R4C5	C—3
R4C6	C—3
R4C7	C—3
R4C8	C—3
R4C9	C—3
R4D0	C—3
R4D1	B—3
R4D2	C—3
R4D3	C—3
R4D4	C—3
R4D5	C—3
R4D6	C—4
R4D7	C—4
R4D8	C—4
R4D9	C—2
R4E0	C—2
R4E1	C—3
R4E2	B—3
R4E3	C—4
R4E4	C—4
R4E5	C—4
R4E6	C—5
R4E7	C—2
R4E8	C—4
R4E9	C—4
R4F0	B—2
R4F1	B—2
R4F2	B—2
R4F3	B—2
R4F4	C—3
R4F5	B—2
R4F6	B—2
R4F7	B—2
R4F8	C—2
R4F9	C—2
R4G0	B—2
R4G1	C—4
R4G2	C—4
R4G3	C—4
R4G6	C—3
R4K4	C—4
R4K5	C—4
R4K6	C—4

SYMBOL NO.	ADDRESS
R4K7	C—4
R5A0	D—2
R5A1	D—3
R5A2	D—2
R5A3	D—2
R5A4	E—3
R5A5	D—3
R5A6	D—3
R5A7	D—2
R5A8	D—3
R5A9	D—3
R5B0	E—6
R5B1	E—6
R5B2	E—5
R5B3	E—6
R5B4	E—6
R5B5	E—6
R5B6	D—4
R5B7	D—7
R5B8	C—2
R5B9	C—5
R5C0	D—6
R5C1	D—5
R5C2	E—5
R5C3	E—5
R5C4	E—5
R5C5	D—5
R5C6	E—5
R5C7	A—1
R5C8	A—1
R5C9	A—1
R5D0	A—2
R5D1	A—2
R5D2	A—2
R5D3	A—2
R5D4	A—2
R5D5	A—2
R5D5	A—2
R5D6	A—2
R5D7	A—1
R5D8	A—1
R5D9	A—2
R5E0	A—1
R5E1	A—1
R5E2	A—2
R5E3	A—2
R5E4	A—2
R5E5	A—3
R5E6	E—7
R5E7	D—5
R5E8	D—5
R5E9	D—5
R5F0	D—5
R5F1	D—6
R5F2	D—5
R5F3	D—4
R5F4	D—4
R5F5	D—4
R5F6	D—4
R5F7	D—4
R5F8	B—6
R5F9	B—6
R5G0	B—6
R5G1	C—6
R5G2	B—6
R5G3	E—5
R5G4	E—5
R5G5	D—3
R5G6	D—4
R5G7	D—4

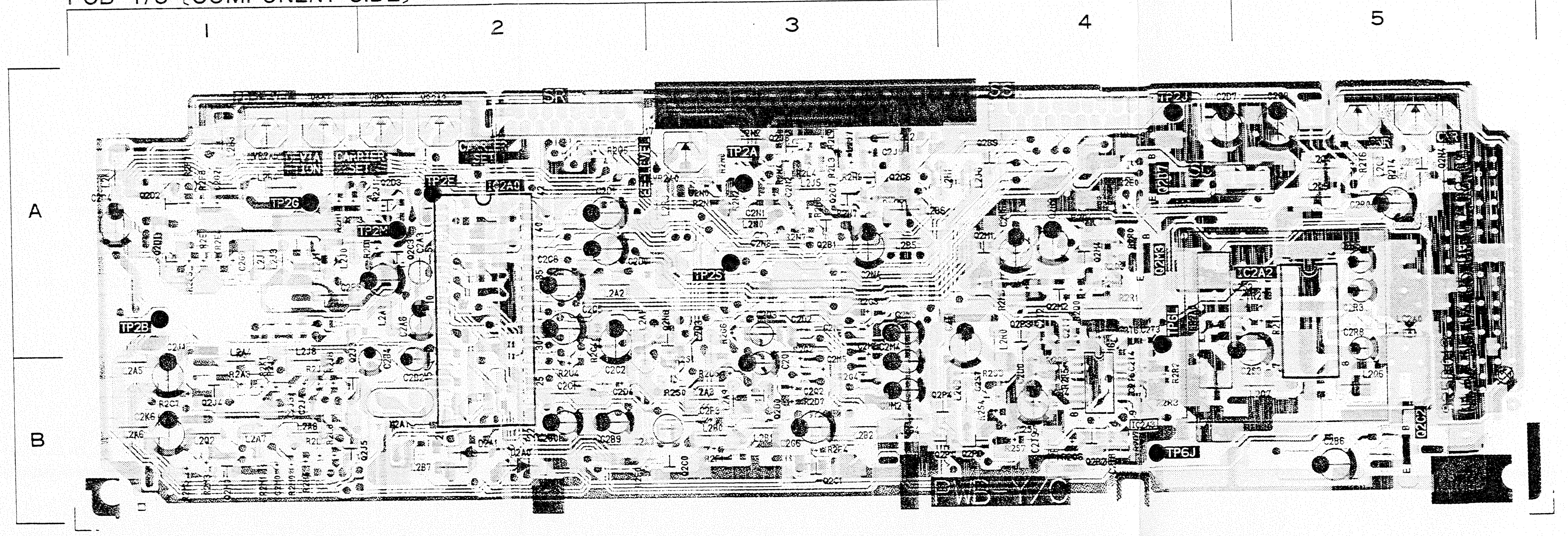
SYMBOL NO.	ADDRESS
R5G8	D—4
R5G9	E—3
R5H0	E—3
R5H1	E—3
R5H2	E—3
R5H3	E—4
R5H4	E—3
R5H5	C—5
R5H6	C—5
R5H7	C—5
R5J0	A—6
R5J1	A—7
R5J2	A—6
R5J3	A—6
R5J4	A—6
R5J5	A—7
R5J6	A—7
R5J7	A—7
R5J8	D—1
R5J9	D—1
R5K0	E—1
R5K1	E—1
R5K2	E—1
R5K3	E—1
R5K4	E—7
R5K5	E—7
R5M0	A—3
R5M1	A—3
R5M2	A—3
R5M3	A—2
R5M4	A—2
R5M5	A—3
R5M6	A—2
R5M7	A—2
R5M8	A—2
R5M9	D—7
R5N0	D—7
RJ01	E—7
RJ02	E—4
RJ03	D—6
RJ04	D—4
RJ05	C—4
RJ06	C—5
RJ10	A—3
RJ11	B—4
RJ13	B—4
RJ14	C—4
RJ16	A—5
RJ17	A—5
RJ18	C—4
RJ19	C—6
RJ20	C—7
RJ21	B—3
RJ22	B—3
RJ23	A—1
RJ24	B—6
RJ25	B—6
RJ26	B—6
RJ27	D—7
RJ28	D—7
RJ29	D—7
RJ30	B—2
RJ31	B—4
RJ32	A—7
RJ33	C—5
RJ34	A—7
RJ35	E—2
RJ36	B—5
RJ37	B—5

SYMBOL NO.	ADDRESS
RJ38	A—5
RJ39	B—4
RJ40	B—5
RJ41	A—5
RJ42	C—4
RJ43	C—5
RJ44	C—5
RJ45	B—4
RJ46	B—4
RJ47	C—5
RJ48	B—2
RJ49	B—7
RJ49	B—4
RJ50	C—7
RJ51	A—6
RJ52	A—5
RJ53	A—5
RJ54	A—6
RJ55	A—6
T3A0	A—3
TP-20Z	B—7
TP-HS	B—5
TP2A	B—6
TP2H	B—6
TP2H	D—1
TP2XY	A—4
TP3EF	A—3
TP3S	B—6
TP4C	B—6
TP5A	E—7
TP5A	B—6
TP5B	C—7
TP5B	B—6
TP5C	D—7
TP5F	D—1
TP5LM	D—2
TP5P0	E—4
TP5P1	E—4
TP5P2	E—5
TP5R	D—7
TP5ST	D—1
TP5T	E—1
TP5W	D—7
TP5X	E—1
TP5Y	E—1
V5A0	E—5
VC2001	C—7
VR2001	A—7
VR201	A—5
VR202	A—5
VR3A0	A—3
VR3A1	A—3
VR3A2	A—3
VR4A0	B—1
VR5A0	A—7
X2000	C—7
X5A0	D—4
X5A1	D—4

PCB-Y/C 〔SOLDER SIDE〕


1
2
3
4
5
A
B
TP2J
TP2A
TP2S
TP2E
TP2G
TP2B
TP6J
SC
SS
SR
PWB-Y/C

PCB-Y/C 〔COMPONENT SIDE〕

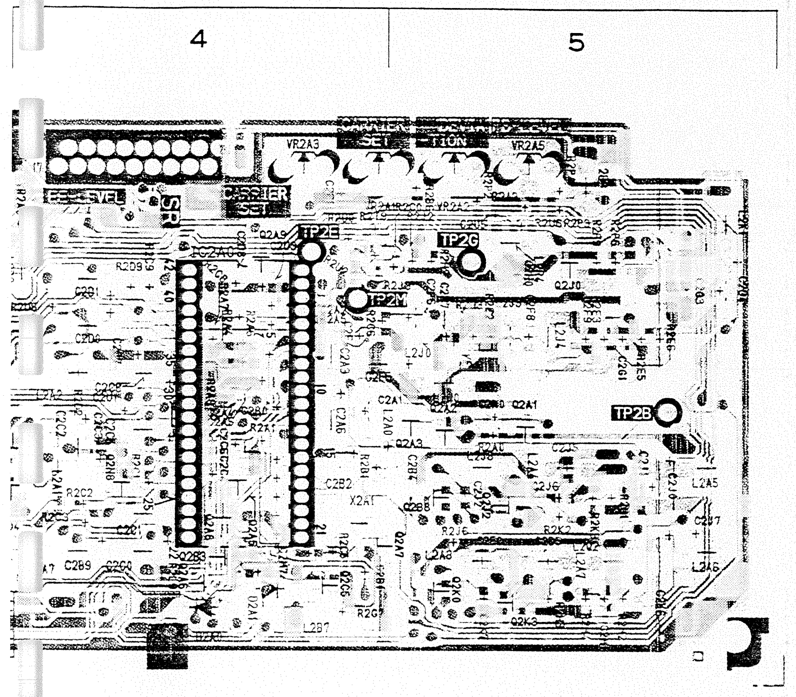

1
2
3
4
5
A
B
TP2G
TP2E
TP2B
TP2A
TP2S
TP2J
TP6J
SR
SS
PWB-Y/C

PCB-Y/

SYMBOL NO.
C2A0
C2A1
C2A2
C2A3
C2A4
C2A5
C2A6
C2A7
C2A8
C2A9
C2B0
C2B1
C2B2
C2B3
C2B4
C2B5
C2B6
C2B7
C2B9
C2C0
C2C1
C2C2
C2C3
C2C4
C2C5
C2C6
C2C7
C2C8
C2D0
C2D1

PCB-Y

SYMBOL NO.
C2A3
C2A6
C2A7
C2B2
C2B4
C2B6
C2B9
C2C0
C2C1
C2C2
C2C5
C2C8
C2D0
C2D1
C2D4
C2D7
C2F3
C2F5
C2G0
C2G2
C2G4
C2G6
C2H3
C2J1
C2J3
C2J4
C2J9
C2K6
C2M0
C2M2



PCB-Y/C [SOLDER SIDE]

SYMBOL NO.	ADDRESS
C2A0	A—5
C2A1	A—4
C2A2	A—4
C2A3	A—4
C2A4	A—4
C2A5	A—4
C2A6	A—4
C2A7	B—4
C2A8	A—4
C2A9	A—4
C2B0	A—4
C2B1	B—4
C2B2	B—4
C2B3	B—4
C2B4	A—5
C2B5	B—4
C2B6	B—1
C2B7	A—3
C2B9	B—4
C2C0	B—4
C2C1	B—4
C2C2	A—4
C2C3	A—4
C2C4	B—4
C2C5	A—4
C2C6	A—4
C2C7	A—4
C2C8	A—4
C2D0	A—4
C2D1	A—4

SYMBOL NO.	ADDRESS
C2D2	B—3
C2D3	B—3
C2D5	B—5
C2D7	A—2
C2D8	A—4
C2E0	B—5
C2E1	A—4
C2F0	B—3
C2F1	B—3
C2F2	B—3
C2F4	A—4
C2F5	A—5
C2F6	A—5
C2F7	A—5
C2F8	A—5
C2F9	A—5
C2G1	A—5
C2G3	A—5
C2G4	A—5
C2G5	B—3
C2G6	B—3
C2H0	A—5
C2H4	A—2
C2J0	B—5
C2J1	B—5
C2J2	B—5
C2J5	B—5
C2J6	B—5
C2J7	B—5
C2J8	A—3

SYMBOL NO.	ADDRESS
C2K0	A—3
C2K1	A—3
C2K2	A—3
C2K3	A—3
C2K4	A—3
C2K5	A—3
C2K6	B—5
C2K7	B—5
C2M1	B—5
C2M2	B—3
C2M4	B—3
C2M5	A—3
C2M6	A—3
C2M7	B—4
C2N4	A—3
C2N8	A—3
C2P0	B—3
C2Q0	B—3
C2Q1	B—3
C2Q3	A—3
C2Q4	A—3
C2Q5	B—3
C2Q6	A—3
C2Q7	A—1
C2Q9	A—1
C2R0	A—1
C2R1	A—2
C2R2	A—2
C2R3	A—1
C2R4	A—1

SYMBOL NO.	ADDRESS
C2R5	A—1
C2R6	A—1
C2R7	B—1
C2R8	B—1
C2R9	B—1
C2S0	A—1
C2S1	A—1
C2S3	B—2
C2S4	B—1
C2S5	A—1
C2S6	A—1
C2S8	B—2
C2S9	B—2
C2T0	A—2
C2T1	A—2
C2T9	B—2
C2U1	A—4
C2U3	A—4
C2U4	A—4
C2U5	A—5
C2U6	A—2
C2U7	A—3
D2A0	B—4
D2A1	B—4
IC2A0	A—4
IC2A1	B—3
IC2A2	A—1

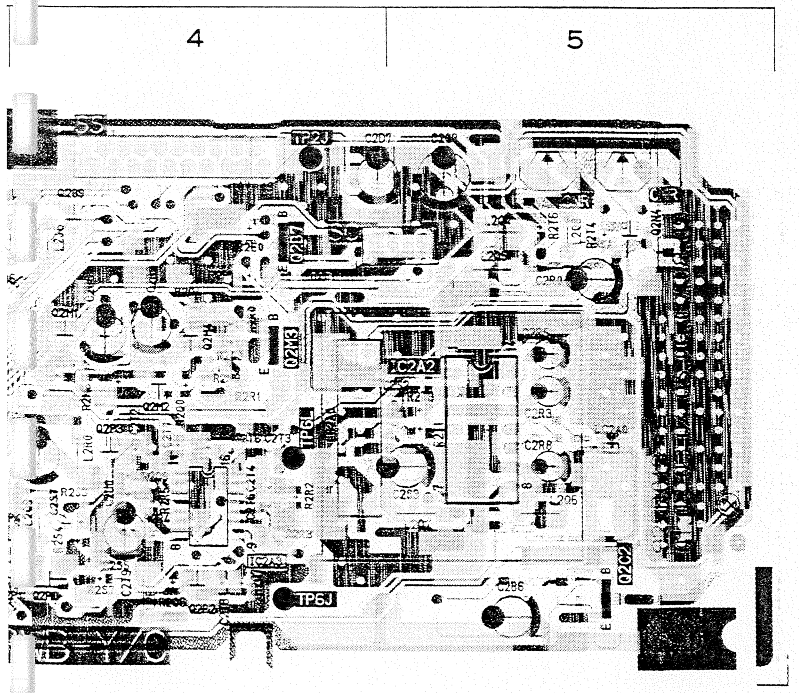
SYMBOL NO.	ADDRESS
L2A0	A—4
L2A1	B—4
L2A2	A—4
L2A3	B—3
L2A4	B—5
L2A5	B—5
L2A6	B—5
L2A7	B—5
L2A8	B—5
L2A9	B—3
L2B0	B—3
L2B1	B—3
L2B2	B—3
L2B3	A—5
L2B5	A—3
L2B6	A—3
L2B7	B—4
L2G4	B—3
L2H0	A—5
L2H1	A—3
L2J0	A—5
L2J1	A—5
L2J2	A—3
L2J3	A—5
L2J4	A—5
L2J5	A—3
L2J6	A—2
L2J7	A—3
L2J8	B—5
L2K1	A—5

SYMBOL NO.	ADDRESS
L2N0	A—3
L2N2	A—3
L2Q2	B—5
L2Q3	B—3
L2Q4	A—1
L2Q5	A—1
L2Q6	B—1
L2Q7	B—2
L2Q8	A—1
L2Q9	B—2
L2R0	B—2
L2R1	B—2
L2R2	B—2
L2R3	A—4
L2R4	A—5
LF2A0	B—2
Q2A1	A—5
Q2A2	A—5
Q2A3	A—5
Q2A5	B—4
Q2A6	B—4
Q2A7	B—4
Q2A8	B—4
Q2A9	A—4
Q2B0	A—3
Q2B3	B—4
Q2B4	A—3
Q2B5	A—3

SYMBOL NO.	ADDRESS
Q2B7	A—2
Q2B8	B—5
Q2C2	B—1
Q2C4	B—3
Q2C5	B—4
Q2J0	A—5
Q2J2	B—5
Q2J7	A—3
Q2J9	A—3
Q2K0	B—5
Q2K3	B—5
Q2N0	A—2
Q2N5	A—1
Q2N7	A—4
Q2N8	B—4
Q2N9	B—2
R2A0	A—5
R2A1	A—4
R2A2	A—5
R2A4	A—4
R2A5	A—4
R2A6	A—4
R2A7	A—4
R2A8	A—4
R2B0	B—4
R2B1	B—4
R2B2	B—4
R2B3	B—4
R2B4	B—4

SYMBOL NO.	ADDRESS
R2B6	A—5
R2B7	B—1
R2B8	B—1
R2B9	B—1
R2C0	A—4
R2C1	B—4
R2C2	B—4
R2C3	B—4
R2C5	B—4
R2C6	A—4
R2C8	A—4
R2C9	A—4
R2D2	A—4
R2D3	A—5
R2D4	B—3
R2D6	B—3
R2D9	A—4
R2E1	A—2
R2E2	A—5
R2E3	A—5
R2E5	A—5
R2E6	A—5
R2F2	B—3
R2F3	B—3
R2F6	A—5
R2F9	A—5
R2G0	A—3
R2G5	A—3
R2G7	B—4
R2H2	A—5

SYMBOL NO.	ADDRESS
R2H3	B—5
R2H5	A—3
R2H6	A—3
R2J2	A—5
R2J3	A—5
R2J6	B—5
R2K2	B—5
R2K3	B—5
R2K4	A—3
R2K5	A—3
R2K6	A—3
R2K7	A—3
R2K8	A—3
R2K9	A—3
R2L0	A—3
R2L1	B—5
R2L9	B—4
R2M2	B—5
R2M4	B—5
R2N3	A—3
R2N6	A—3
R2N8	A—3
R2P2	A—5
R2P3	A—5
R2P4	A—5
R2P5	A—2
R2Q1	A—2
R2Q2	A—2
R2Q5	A—2
R2R1	A—2



PCB-Y/C [COMPONENT SIDE]

SYMBOL NO.	ADDRESS
C2A3	A—2
C2A6	A—2
C2A7	B—3
C2B2	B—2
C2B4	A—2
C2B6	B—5
C2B9	B—2
C2C0	B—2
C2C1	B—2
C2C2	A—2
C2C5	A—2
C2C8	A—2
C2D0	A—2
C2D1	A—2
C2D4	B—2
C2D7	A—4
C2F3	B—3
C2F5	A—2
C2G0	A—1
C2G2	A—1
C2G4	A—1
C2G6	B—3
C2H3	A—1
C2J1	B—1
C2J3	B—1
C2J4	B—1
C2J9	A—3
C2K6	B—1
C2M0	B—1
C2M2	B—3

SYMBOL NO.	ADDRESS
C2M3	B—3
C2M4	B—3
C2M5	A—3
C2N0	A—3
C2N1	A—3
C2N2	A—3
C2N3	A—3
C2N4	A—3
C2N5	B—3
C2N7	A—3
C2Q1	B—3
C2Q2	B—3
C2Q3	A—3
C2Q7	A—5
C2R0	A—5
C2R2	A—4
C2R3	A—5
C2R5	A—5
C2R8	B—5
C2S2	A—5
C2S3	B—5
C2S7	B—4
C2T1	A—4
C2T2	A—4
C2T3	A—4
C2T4	B—4
C2T5	B—4
C2T6	A—4
C2T7	A—4
C2T8	B—4

SYMBOL NO.	ADDRESS
C2T9	B—4
C2U0	B—4
C2U2	A—3
C2U6	A—4
D2A0	B—2
D2A1	B—2
IC2A0	A—2
IC2A2	A—5
IC2A3	B—4
L2A0	A—2
L2A1	B—2
L2A2	A—2
L2A3	B—3
L2A4	B—1
L2A5	B—1
L2A6	B—1
L2A7	B—1
L2A8	B—1
L2A9	B—3
L2B0	B—3
L2B1	B—3
L2B2	B—3
L2B3	A—1
L2B5	A—3
L2B6	A—3
L2B7	B—2
L2G4	B—3

SYMBOL NO.	ADDRESS
L2H0	A—1
L2H1	A—4
L2J0	A—1
L2J1	A—1
L2J2	A—3
L2J3	A—1
L2J4	A—1
L2J5	A—3
L2J6	A—4
L2J7	A—3
L2J8	B—1
L2K1	A—1
L2N0	A—3
L2N2	A—3
L2Q2	B—1
L2Q3	B—3
L2Q4	A—5
L2Q5	A—5
L2Q6	B—5
L2Q7	B—5
L2Q8	A—5
L2Q9	B—4
L2R0	B—4
L2R1	B—4
L2R3	A—3
L2R4	A—1
LC2A0	A—5
LF2A0	B—4

SYMBOL NO.	ADDRESS
Q2B1	A—3
Q2B7	A—4
Q2B9	A—4
Q2C0	B—3
Q2C1	B—3
Q2C2	B—5
Q2C3	A—2
Q2C6	A—3
Q2C7	A—3
Q2D0	B—3
Q2D1	A—1
Q2D2	A—1
Q2D3	A—2
Q2J3	B—1
Q2J4	B—1
Q2J5	B—1
Q2J8	A—3
Q2M0	B—1
Q2M1	A—4
Q2M2	A—4
Q2M3	A—4
Q2M4	A—4
Q2N4	A—5
Q2N6	A—3
Q2P0	B—4
Q2P1	B—4
Q2P2	B—4
Q2P3	A—4
Q2P4	B—4

SYMBOL NO.	ADDRESS
R2A3	B—1
R2C4	A—2
R2C7	B—1
R2D1	A—2
R2D5	B—3
R2D7	B—3
R2E0	A—4
R2E1	A—4
R2E4	A—1
R2E7	A—1
R2F0	B—2
R2F1	B—3
R2F4	B—3
R2F5	A—1
R2F7	A—1
R2F8	A—1
R2G2	B—3
R2G3	A—3
R2G4	B—3
R2G6	A—3
R2H1	A—1
R2H4	B—1
R2H7	A—3
R2H8	A—3
R2H9	A—3
R2J1	A—2
R2J7	B—1
R2J8	B—1
R2J9	B—1

SYMBOL NO.	ADDRESS
R2K1	B—1
R2L2	A—3
R2L3	A—3
R2L4	A—3
R2L7	B—1
R2L8	B—1
R2M0	B—1
R2M1	B—1
R2M3	B—1
R2M5	B—1
R2M6	A—4
R2M9	A—4
R2N0	A—3
R2N1	A—3
R2N2	A—3
R2N4	A—3
R2N5	A—3
R2N7	A—3
R2P1	A—4
R2Q0	A—4
R2Q3	A—4
R2Q4	A—4
R2Q6	B—4
R2Q7	B—4
R2Q9	B—4
R2R0	A—4
R2R1	A—4
R2R2	B—4
R2R3	B—4
R2R4	B—4

SYMBOL NO.	ADDRESS
R2R5	B—4
R2S0	B—3
R2S1	B—3
R2S3	B—4
R2S4	B—4
R2S5	B—4
R2S7	B—4
R2T1	A—5
R2T3	A—5
R2T4	A—5
R2T6	A—5
R2U4	B—2
R2U5	A—2
SC	A—4
SR	A—2
SS	A—4
TP2A	A—3
TP2B	A—1
TP2E	A—2
TP2G	A—1
TP2J	A—4
TP2M	A—2
TP2S	A—3
TP6J	B—4
TP6L	A—4
VR2A0	A—3
VR2A1	A—2

SYMBOL NO.	ADDRESS
VR2A2	A—1
VR2A3	A—2
VR2A5	A—1
VR2A6	A—5
VR2A7	A—5
X2A1	B—2

E]

BOL	ADDRESS
	B—3
	B—3
	B—5
	A—2
	A—4
	B—5
	A—4
	B—3
	B—3
	B—3
	A—4
	A—5
	A—5
	A—5
	A—5
	A—5
	A—5
	A—5
	A—5
	B—3
	B—3
	A—5
	A—2
	B—5
	B—5
	B—5
	B—5
	B—5
	B—5
	A—3

SYMBOL NO.	ADDRESS
C2K0	A—3
C2K1	A—3
C2K2	A—3
C2K3	A—3
C2K4	A—3
C2K5	A—3
C2K6	B—5
C2K7	B—5
C2M1	B—5
C2M2	B—3
C2M4	B—3
C2M5	A—3
C2M6	A—3
C2M7	B—4
C2N4	A—3
C2N8	A—3
C2P0	B—3
C2Q0	B—3
C2Q1	B—3
C2Q3	A—3
C2Q4	A—3
C2Q5	B—3
C2Q6	A—3
C2Q7	A—1
C2Q9	A—1
C2R0	A—1
C2R1	A—2
C2R2	A—2
C2R3	A—1
C2R4	A—1

SYMBOL NO.	ADDRESS
C2R5	A—1
C2R6	A—1
C2R7	B—1
C2R8	B—1
C2R9	B—1
C2S0	A—1
C2S1	A—1
C2S3	B—2
C2S4	B—1
C2S5	A—1
C2S6	A—1
C2S8	B—2
C2S9	B—2
C2T0	A—2
C2T1	A—2
C2T9	B—2
C2U1	A—4
C2U3	A—4
C2U4	A—4
C2U5	A—5
C2U6	A—2
C2U7	A—3
D2A0	B—4
D2A1	B—4
IC2A0	A—4
IC2A1	B—3
IC2A2	A—1

SYMBOL NO.	ADDRESS
L2A0	A—4
L2A1	B—4
L2A2	A—4
L2A3	B—3
L2A4	B—5
L2A5	B—5
L2A6	B—5
L2A7	B—5
L2A8	B—5
L2A9	B—3
L2B0	B—3
L2B1	B—3
L2B2	B—3
L2B3	A—5
L2B5	A—3
L2B6	A—3
L2B7	B—4
L2G4	B—3
L2H0	A—5
L2H1	A—3
L2J0	A—5
L2J1	A—5
L2J2	A—3
L2J3	A—5
L2J4	A—5
L2J5	A—3
L2J6	A—2
L2J7	A—3
L2J8	B—5
L2K1	A—5

SYMBOL NO.	ADDRESS
L2N0	A—3
L2N2	A—3
L2Q2	B—5
L2Q3	B—3
L2Q4	A—1
L2Q5	A—1
L2Q6	B—1
L2Q7	B—2
L2Q8	A—1
L2Q9	B—2
L2R0	B—2
L2R1	B—2
L2R2	B—2
L2R3	A—4
L2R4	A—5
LF2A0	B—2
Q2A1	A—5
Q2A2	A—5
Q2A3	A—5
Q2A5	B—4
Q2A6	B—4
Q2A7	B—4
Q2A8	B—4
Q2A9	A—4
Q2B0	A—3
Q2B3	B—4
Q2B4	A—3
Q2B5	A—3

SYMBOL NO.	ADDRESS
Q2B7	A—2
Q2B8	B—5
Q2C2	B—1
Q2C4	B—3
Q2C5	B—4
Q2J0	A—5
Q2J2	B—5
Q2J7	A—3
Q2J9	A—3
Q2K0	B—5
Q2K3	B—5
Q2N0	A—2
Q2N5	A—1
Q2N7	A—4
Q2N8	B—4
Q2N9	B—2
R2A0	A—5
R2A1	A—4
R2A2	A—5
R2A4	A—4
R2A5	A—4
R2A6	A—4
R2A7	A—4
R2A8	A—4
R2B0	B—4
R2B1	B—4
R2B2	B—4
R2B3	B—4
R2B4	B—4

SYMBOL NO.	ADDRESS
R2B6	A—5
R2B7	B—1
R2B8	B—1
R2B9	B—1
R2C0	A—4
R2C1	B—4
R2C2	B—4
R2C3	B—4
R2C5	B—4
R2C6	A—4
R2C8	A—4
R2C9	A—4
R2D2	A—4
R2D3	A—5
R2D4	B—3
R2D6	B—3
R2D9	A—4
R2E1	A—2
R2E2	A—5
R2E3	A—5
R2E5	A—5
R2E6	A—5
R2F2	B—3
R2F3	B—3
R2F6	A—5
R2F9	A—5
R2G0	A—3
R2G5	A—3
R2G7	B—4
R2H2	A—5

SYMBOL NO.	ADDRESS
R2H3	B—5
R2H5	A—3
R2H6	A—3
R2J2	A—5
R2J3	A—5
R2J6	B—5
R2K2	B—5
R2K3	B—5
R2K4	A—3
R2K5	A—3
R2K6	A—3
R2K7	A—3
R2K8	A—3
R2K9	A—3
R2L0	A—3
R2L1	B—5
R2L9	B—4
R2M2	B—5
R2M4	B—5
R2N3	A—3
R2N6	A—3
R2N8	A—3
R2P2	A—5
R2P3	A—5
R2P4	A—5
R2P5	A—2
R2Q1	A—2
R2Q2	A—2
R2Q5	A—2
R2R1	A—2

SYMBOL NO.	ADDRESS
R2S6	B—2
R2S8	B—2
R2S9	A—2
R2T0	A—2
R2T2	B—2
R2T5	A—1
R2T7	A—1
R2T8	A—1
R2T9	A—4
R2U0	A—4
R2U1	A—3
R2U2	A—4
R2U3	A—3
R2U6	A—5
R2U7	A—4
R2U8	A—4
RJ1	B—2
SC	A—2
SR	A—4
SS	A—2
TP2A	A—3
TP2B	A—5
TP2E	A—4
TP2G	A—5
TP2J	A—2
TP2M	A—4
TP2S	A—3

SYMBOL NO.	ADDRESS
TP6J	B—2
TP6L	A—2
VR2A0	A—3
VR2A1	A—4
VR2A2	A—5
VR2A3	A—4
VR2A5	A—5
VR2A6	A—1
VR2A7	A—1
X2A1	B—4

T SIDE]

BOL	ADDRESS
	B—3
	B—3
	A—3
	A—3
	A—3
	A—3
	A—3
	A—3
	B—3
	A—3
	B—3
	B—3
	A—3
	A—5
	A—5
	A—4
	A—5
	A—5
	B—5
	A—5
	B—5
	B—4
	A—4
	A—4
	A—4
	B—4
	B—4
	A—4
	A—4
	B—4

SYMBOL NO.	ADDRESS
C2T9	B—4
C2U0	B—4
C2U2	A—3
C2U6	A—4
D2A0	B—2
D2A1	B—2
IC2A0	A—2
IC2A2	A—5
IC2A3	B—4
L2A0	A—2
L2A1	B—2
L2A2	A—2
L2A3	B—3
L2A4	B—1
L2A5	B—1
L2A6	B—1
L2A7	B—1
L2A8	B—1
L2A9	B—3
L2B0	B—3
L2B1	B—3
L2B2	B—3
L2B3	A—1
L2B5	A—3
L2B6	A—3
L2B7	B—2
L2G4	B—3

SYMBOL NO.	ADDRESS
L2H0	A—1
L2H1	A—4
L2J0	A—1
L2J1	A—1
L2J2	A—3
L2J3	A—1
L2J4	A—1
L2J5	A—3
L2J6	A—4
L2J7	A—3
L2J8	B—1
L2K1	A—1
L2N0	A—3
L2N2	A—3
L2Q2	B—1
L2Q3	B—3
L2Q4	A—5
L2Q5	A—5
L2Q6	B—5
L2Q7	B—5
L2Q8	A—5
L2Q9	B—4
L2R0	B—4
L2R1	B—4
L2R3	A—3
L2R4	A—1
LC2A0	A—5
LF2A0	B—4

SYMBOL NO.	ADDRESS
Q2B1	A—3
Q2B7	A—4
Q2B9	A—4
Q2C0	B—3
Q2C1	B—3
Q2C2	B—5
Q2C3	A—2
Q2C6	A—3
Q2C7	A—3
Q2D0	B—3
Q2D1	A—1
Q2D2	A—1
Q2D3	A—2
Q2J3	B—1
Q2J4	B—1
Q2J5	B—1
Q2J8	A—3
Q2M0	B—1
Q2M1	A—4
Q2M2	A—4
Q2M3	A—4
Q2M4	A—4
Q2N4	A—5
Q2N6	A—3
Q2P0	B—4
Q2P1	B—4
Q2P2	B—4
Q2P3	A—4
Q2P4	B—4

SYMBOL NO.	ADDRESS
R2A3	B—1
R2C4	A—2
R2C7	B—1
R2D1	A—2
R2D5	B—3
R2D7	B—3
R2E0	A—4
R2E1	A—4
R2E4	A—1
R2E7	A—1
R2F0	B—2
R2F1	B—3
R2F4	B—3
R2F5	A—1
R2F7	A—1
R2F8	A—1
R2G2	B—3
R2G3	A—3
R2G4	B—3
R2G6	A—3
R2H1	A—1
R2H4	B—1
R2H7	A—3
R2H8	A—3
R2H9	A—3
R2J1	A—2
R2J7	B—1
R2J8	B—1
R2J9	B—1

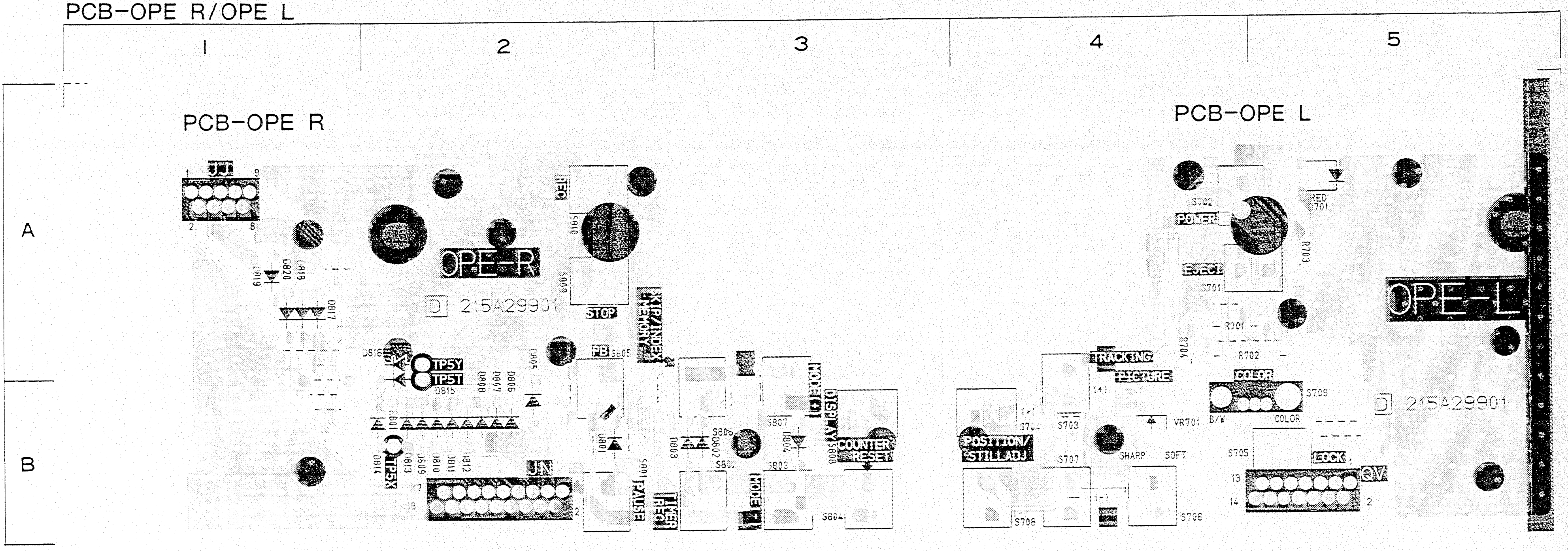
SYMBOL NO.	ADDRESS
R2K1	B—1
R2L2	A—3
R2L3	A—3
R2L4	A—3
R2L7	B—1
R2L8	B—1
R2M0	B—1
R2M1	B—1
R2M3	B—1
R2M5	B—1
R2M6	A—4
R2M9	A—4
R2N0	A—3
R2N1	A—3
R2N2	A—3
R2N4	A—3
R2N5	A—3
R2N7	A—3
R2P1	A—4
R2Q0	A—4
R2Q3	A—4
R2Q4	A—4
R2Q6	B—4
R2Q7	B—4
R2Q9	B—4
R2R0	A—4
R2R1	A—4
R2R2	B—4
R2R3	B—4
R2R4	B—4

SYMBOL NO.	ADDRESS
R2R5	B—4
R2S0	B—3
R2S1	B—3
R2S3	B—4
R2S4	B—4
R2S5	B—4
R2S7	B—4
R2T1	A—5
R2T3	A—5
R2T4	A—5
R2T6	A—5
R2U4	B—2
R2U5	A—2
SC	A—4
SR	A—2
SS	A—4
TP2A	A—3
TP2B	A—1
TP2E	A—2
TP2G	A—1
TP2J	A—4
TP2M	A—2
TP2S	A—3
TP6J	B—4
TP6L	A—4
VR2A0	A—3
VR2A1	A—2

SYMBOL NO.	ADDRESS
VR2A2	A—1
VR2A3	A—2
VR2A5	A—1
VR2A6	A—5
VR2A7	A—5
X2A1	B—2

SYMBOL NO.	ADDRESS

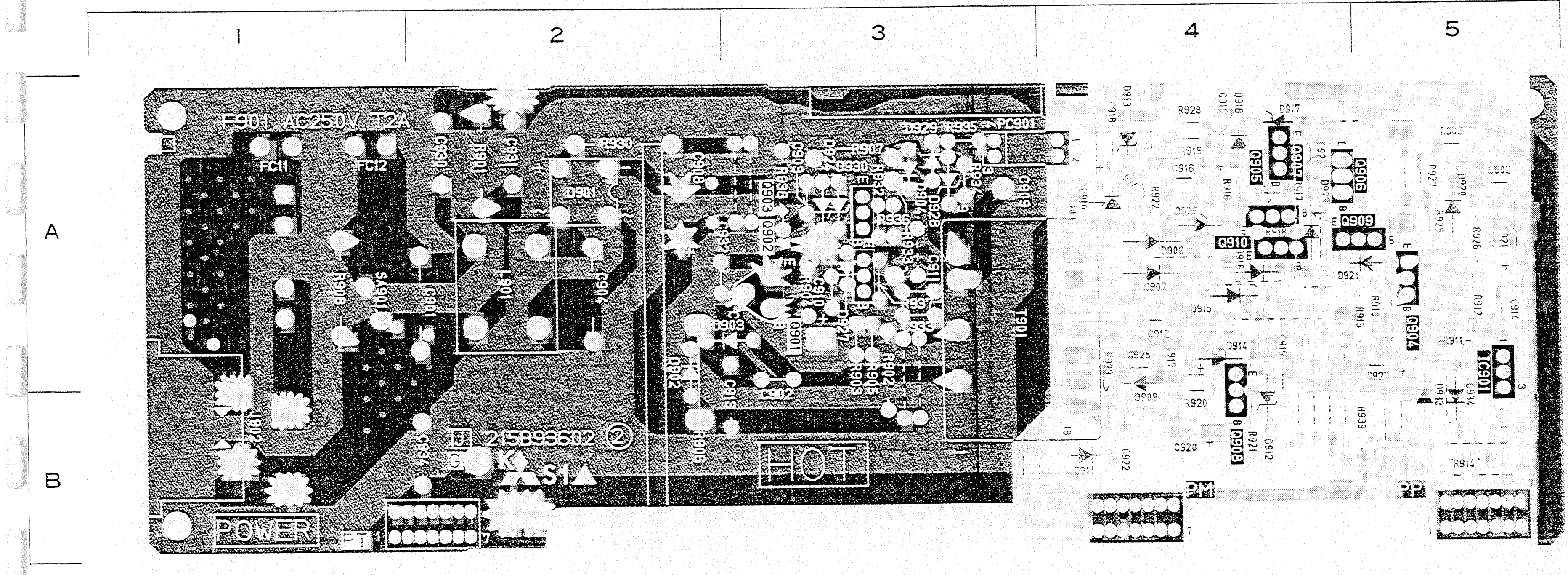
PCB-OPE R/OPE L


1
2
3
4
5
A
B
PCB-OPE R
PCB-OPE L
OPE-R
OPE-L
215A29901
215A29901
JJ
JN
STOP
REC
TP5Y
TP5T
TP5X
POWER
EJECT
TRACKING
PICTURE
COLOR
POSITION/ STILL ADJ
COUNTER RESET
LOCK
QV
SHARP
SOFT
VR701

PCB-OPE R/OPE L

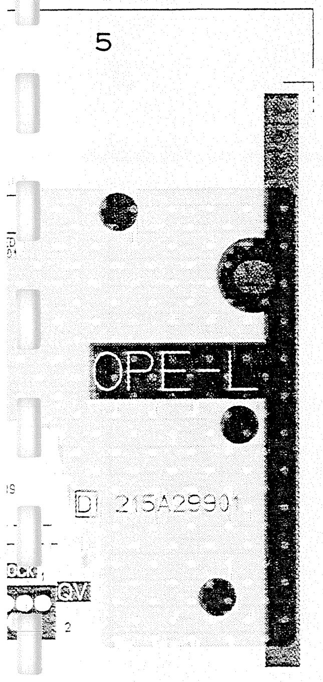
SYMBOL NO.	ADDRESS
D701	A—5
D801	B—2
D802	B—3
D803	B—3
D804	B—3
D805	B—2
D806	B—2
D807	B—2
D808	B—2
D809	B—2
D810	B—2
D811	B—2
D812	B—2
D813	B—2
D814	B—1
D815	B—1
D816	A—1
D817	A—1
D818	A—1
D819	A—1
D820	A—1
JJ	A—1
JN	B—2
QV	B—5
R701	A—4
R702	A—5
R703	A—5
R704	B—4
R801	B—2
S701	A—4
S702	A—4
S703	B—4
S704	B—4
S705	B—5
S706	B—4
S707	B—4
S708	B—4
S709	B—4
S801	B—2
S802	B—3
S803	B—3
S804	B—3
S805	B—2
S806	B—3
S807	B—3
S808	B—3
S809	A—2
S810	A—2
TP5T	B—2
TP5X	B—2
TP5Y	A—2
VR701	B—4

PCB-POWER 〔HS-7424E〕


1
2
3
4
5
A
B
F901 AC250V T2A
FC11
FC12
D901
IC901
T901
Q905
Q906
Q908
Q909
Q910
PC901
HOT
POWER
PT
PM
PP
215B93602 ②
G
K
S1

PCB-POWER [HS-7424E]

SYMBOL NO.	ADDRESS
C901	A—2
C902	B—3
C903	A—3
C904	A—2
C908	A—2
C909	A—4
C910	A—3
C911	A—3
C912	A—4
C913	B—2
C914	A—5
C915	A—4
C916	A—4
C917	A—4
C918	A—4
C919	B—4
C920	B—4
C921	A—5
C922	B—4
C924	A—4
C925	A—4
C926	A—4
C927	A—5
C930	A—2
C931	A—2
C932	A—2
C933	A—3
C934	B—2
D901	A—2
D902	A—2
D903	A—2
D904	A—3
D907	A—4
D908	A—4
D909	B—4
D910	A—4
D911	B—4
D912	B—4
D913	A—4
D914	A—4
D915	A—4
D916	A—4
D917	A—4
D918	A—4
D920	A—5
D921	A—4
D923	A—4
D924	A—3
D926	A—4
D927	A—3
D928	A—3
D929	A—3
D930	A—3
D933	B—5
D934	B—5
FC11	A—1
FC12	A—1
G	B—2
IC901	A—5
J902	B—1
L901	A—2
L902	A—5
PC901	A—4
PM	B—4
PP	B—5
PT	B—1
Q901	A—3
Q902	A—3
Q903	A—3
Q904	A—5
Q905	A—4
Q906	A—4
Q907	A—4
Q908	B—4
Q909	A—4
Q910	A—4
R901	A—2
R902	B—3
R903	A—3
R904	A—3
R905	A—3
R906	B—2
R907	A—3
R908	A—1
R909	A—5
R910	A—5
R911	A—5
R912	A—5
R914	B—5
R915	A—4
R916	A—4
R917	A—4
R918	A—4
R919	A—4
R920	B—4
R921	B—4
R922	A—4
R923	B—4
R925	A—5
R926	A—5
R927	A—5
R928	A—4
R930	A—2
R932	A—3
R933	A—3
R934	A—3
R935	A—3
R936	A—3
R937	A—3
R938	A—3
R939	B—4
SA901	A—1
T901	A—3

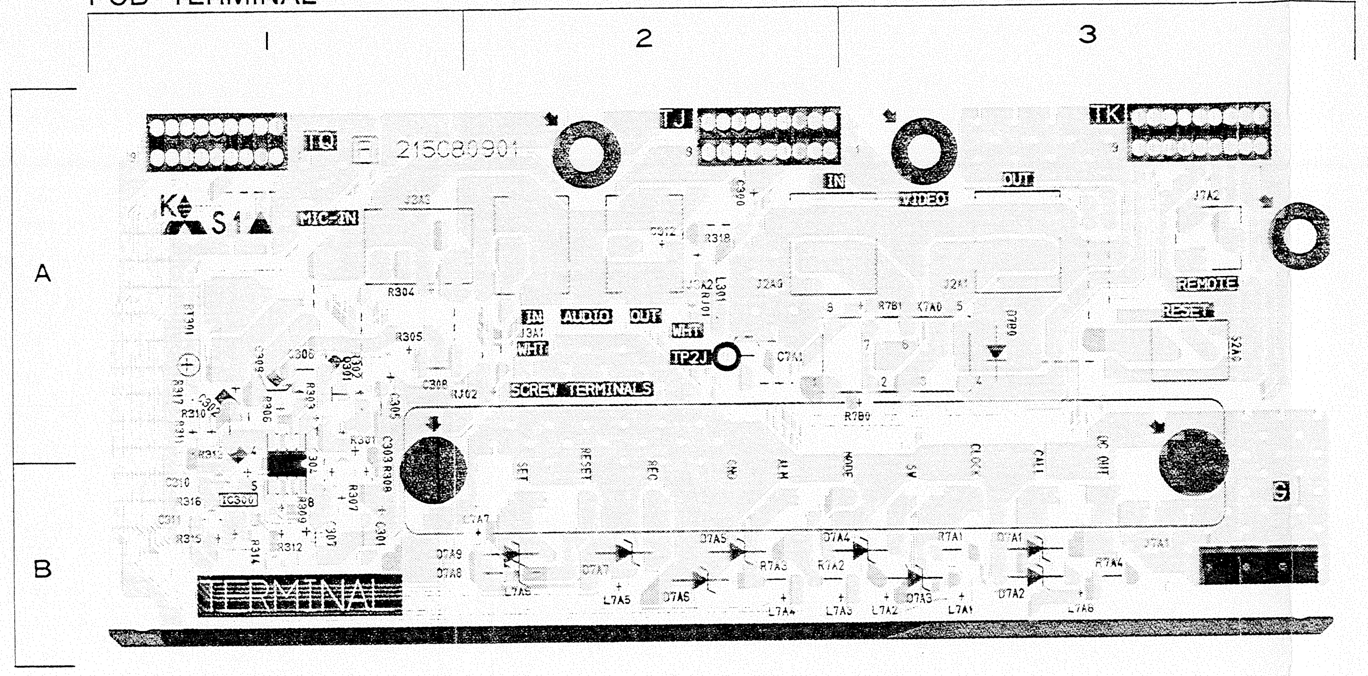


PCB-OPE R/OPE L

SYMBOL NO.	ADDRESS
D701	A—5
D801	B—2
D802	B—3
D803	B—3
D804	B—3
D805	B—2
D806	B—2
D807	B—2
D808	B—2
D809	B—2
D810	B—2
D811	B—2
D812	B—2
D813	B—2
D814	B—1
D815	B—1
D816	A—1
D817	A—1
D818	A—1
D819	A—1
D820	A—1
JJ	A—1
JN	B—2
QV	B—5
R701	A—4
R702	A—5
R703	A—5

SYMBOL NO.	ADDRESS
R704	B—4
R801	B—2
S701	A—4
S702	A—4
S703	B—4
S704	B—4
S705	B—5
S706	B—4
S707	B—4
S708	B—4
S709	B—4
S801	B—2
S802	B—3
S803	B—3
S804	B—3
S805	B—2
S806	B—3
S807	B—3
S808	B—3
S809	A—2
S810	A—2
TP5T	B—2
TP5X	B—2
TP5Y	A—2
VR701	B—4

PCB-TERMINAL



PCB-TERMINAL

SYMBOL NO.	ADDRESS
BT301	A—1
C300	A—2
C301	B—1
C302	A—1
C303	B—1
C304	B—1
C305	A—1
C306	A—1
C307	B—1
C308	A—1
C309	A—1
C310	B—1
C311	B—1
C312	A—2
C7A1	A—2
D7A1	B—3
D7A2	B—3
D7A3	B—3
D7A4	B—3
D7A5	B—2
D7A6	B—2
D7A7	B—2
D7A8	B—2
D7A9	B—2
D7B0	A—3
IC300	B—1

SYMBOL NO.	ADDRESS
J2A0	A—2
J2A1	A—3
J3A1	A—2
J3A2	A—2
J3A3	A—1
J7A1	B—3
J7A2	A—3
K7A0	A—3
L301	A—2
L7A1	B—3
L7A2	B—3
L7A3	B—2
L7A4	B—2
L7A5	B—2
L7A6	B—2
L7A7	B—2
L7A8	B—3
Q301	A—1
R301	A—1
R302	A—1
R303	A—1
R304	A—1
R305	A—1
R306	A—1
R307	B—1
R308	B—1

[HS-7424E]

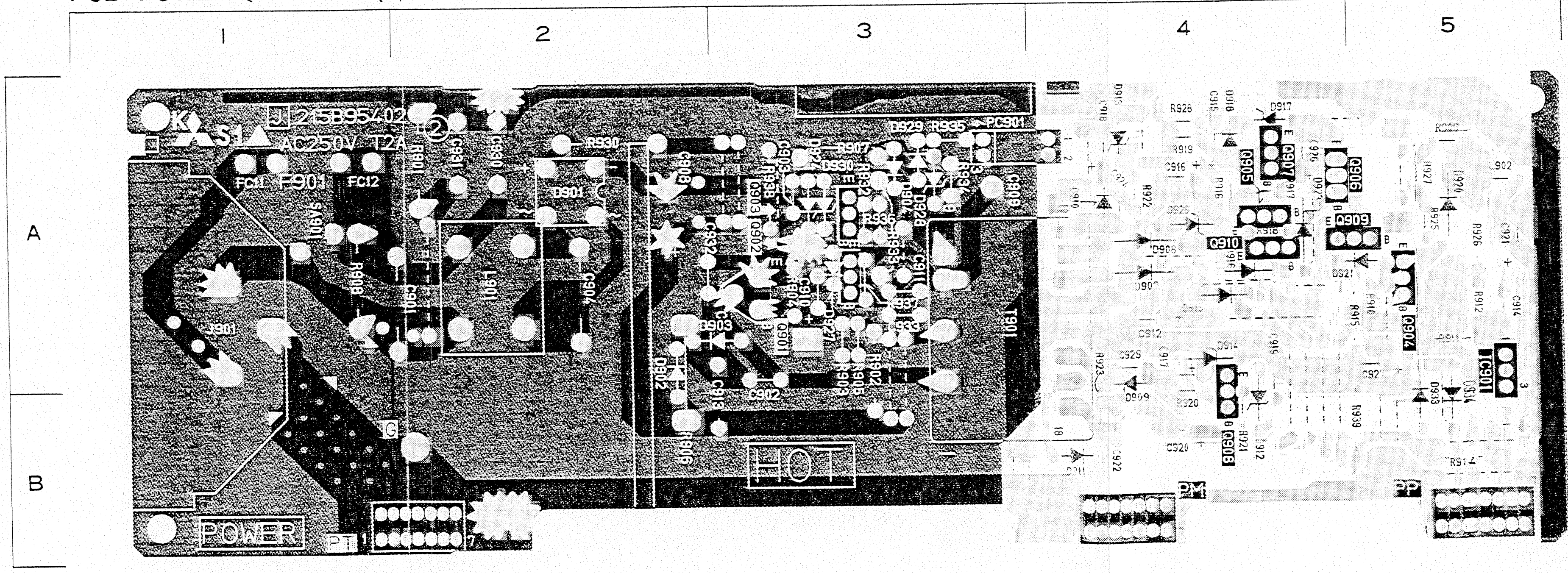
SYMBOL NO.	ADDRESS
D902	A—2
D903	A—2
D904	A—3
D907	A—4
D908	A—4
D909	B—4
D910	A—4
D911	B—4
D912	B—4
D913	A—4
D914	A—4
D915	A—4
D916	A—4
D917	A—4
D918	A—4
D920	A—5
D921	A—4
D923	A—4
D924	A—3
D926	A—4
D927	A—3
D928	A—3
D929	A—3
D930	A—3
D933	B—5
D934	B—5
FC11	A—1
FC12	A—1

SYMBOL NO.	ADDRESS
G	B—2
IC901	A—5
J902	B—1
L901	A—2
L902	A—5
PC901	A—4
PM	B—4
PP	B—5
PT	B—1
Q901	A—3
Q902	A—3
Q903	A—3
Q904	A—5
Q905	A—4
Q906	A—4
Q907	A—4
Q908	B—4
Q909	A—4
Q910	A—4
R901	A—2
R902	B—3
R903	A—3
R904	A—3

SYMBOL NO.	ADDRESS
R905	A—3
R906	B—2
R907	A—3
R908	A—1
R909	A—5
R910	A—5
R911	A—5
R912	A—5
R914	B—5
R915	A—4
R916	A—4
R917	A—4
R918	A—4
R919	A—4
R920	B—4
R921	B—4
R922	A—4
R923	B—4
R925	A—5
R926	A—5
R927	A—5
R928	A—4
R930	A—2
R932	A—3
R933	A—3
R934	A—3
R935	A—3
R936	A—3
R937	A—3
R938	A—3

SYMBOL NO.	ADDRESS
R939	B—4
SA901	A—1
T901	A—3

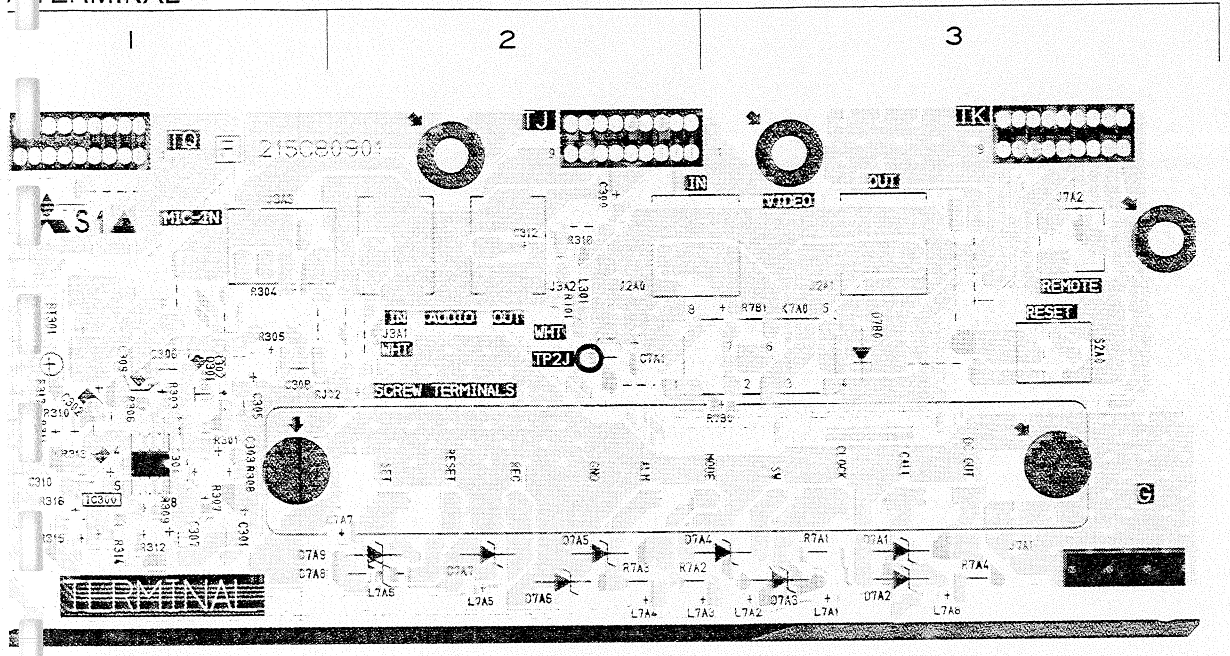
PCB-POWER 〔HS-7424E(B)〕



PCB-PO

SYMBOL NO.	A
C901	A
C902	A
C903	A
C904	A
C908	A
C909	A
C910	A
C911	A
C912	A
C913	
C914	A
C915	A
C916	A
C917	A
C918	A
C919	
C920	
C921	A
C922	
C924	
C925	
C926	
C927	
C930	
C931	
C932	
C933	
D901	
D902	

TERMINAL


1
2
3
TQ
E 215C80901
TJ
TK
S1
MIC-IN
IN
VIDEO
OUT
IN
AUDIO
OUT
WHT
WHT
TP2J
REMOTE
RESET
SCREW TERMINALS
G
TERMINAL

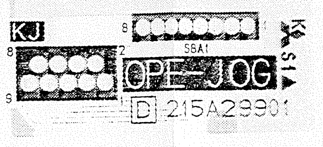
PCB−TERMINAL

SYMBOL NO.	ADDRESS
BT301	A−1
C300	A−2
C301	B−1
C302	A−1
C303	B−1
C304	B−1
C305	A−1
C306	A−1
C307	B−1
C308	A−1
C309	A−1
C310	B−1
C311	B−1
C312	A−2
C7A1	A−2
D7A1	B−3
D7A2	B−3
D7A3	B−3
D7A4	B−3
D7A5	B−2
D7A6	B−2
D7A7	B−2
D7A8	B−2
D7A9	B−2
D7B0	A−3
IC300	B−1

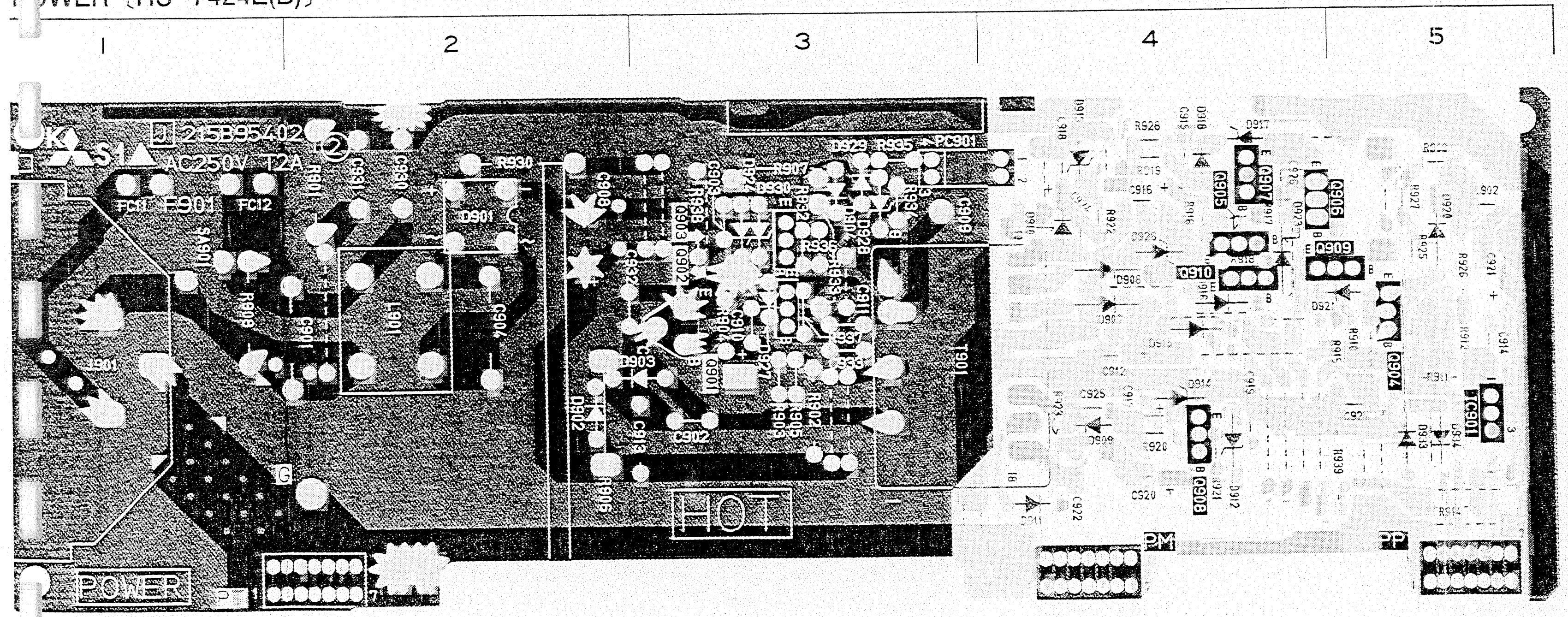
SYMBOL NO.	ADDRESS
J2A0	A−2
J2A1	A−3
J3A1	A−2
J3A2	A−2
J3A3	A−1
J7A1	B−3
J7A2	A−3
K7A0	A−3
L301	A−2
L7A1	B−3
L7A2	B−3
L7A3	B−2
L7A4	B−2
L7A5	B−2
L7A6	B−2
L7A7	B−2
L7A8	B−3
Q301	A−1
R301	A−1
R302	A−1
R303	A−1
R304	A−1
R305	A−1
R306	A−1
R307	B−1
R308	B−1

SYMBOL NO.	ADDRESS
R309	B−1
R310	A−1
R311	A−1
R312	B−1
R313	B−1
R314	B−1
R315	B−1
R316	B−1
R317	B−1
R318	A−2
R7A1	B−3
R7A2	B−2
R7A3	B−2
R7A4	B−3
R7B0	A−3
R7B1	A−3
RJ01	A−2
RJ02	A−2
S2A0	A−3
TJ	A−2
TK	A−3
TP2J	A−2
TQ	A−1

PCB−OPE−JOG


KJ
KK
S1
OPE-JOG
D 215A29901

OWER〔HS−7424E(B)〕


1
2
3
4
5
KJ
S1
215B95402
AC250V T2A
FC11
F901
FC12
HOT
PM
PP
PT
POWER
G

PCB-POWER [HS-7424E(B)]

SYMBOL NO.	ADDRESS
C901	A−1
C902	A−3
C903	A−3
C904	A−2
C908	A−2
C909	A−4
C910	A−3
C911	A−3
C912	A−4
C913	B−2
C914	A−5
C915	A−4
C916	A−4
C917	A−4
C918	A−4
C919	B−4
C920	B−4
C921	A−5
C922	B−4
C924	A−4
C925	A−4
C926	A−4
C927	A−5
C930	A−2
C931	A−2
C932	A−2
C933	A−3
D901	A−2
D902	A−2

SYMBOL NO.	ADDRESS
D903	A−2
D904	A−3
D907	A−4
D908	A−4
D909	A−4
D910	A−4
D911	B−4
D912	B−4
D913	A−4
D914	A−4
D915	A−4
D916	A−4
D917	A−4
D918	A−4
D920	A−5
D921	A−4
D923	A−4
D924	A−3
D926	A−4
D927	A−3
D928	A−3
D929	A−3
D930	A−3
D933	A−5
D934	B−5
FC11	A−1
FC12	A−1
G	B−2

SYMBOL NO.	ADDRESS
IC901	A−5
J901	A−1
L901	A−2
L902	A−5
PC901	A−4
PM	B−4
PP	B−5
PT	B−1
Q901	A−3
Q902	A−3
Q903	A−3
Q904	A−5
Q905	A−4
Q906	A−4
Q907	A−4
Q908	A−4
Q909	A−4
Q910	A−4
R901	A−2
R902	B−3
R903	A−3
R904	A−3
R905	A−3

SYMBOL NO.	ADDRESS
R906	B−2
R907	A−3
R908	A−1
R909	A−5
R910	A−5
R911	A−5
R912	A−5
R914	B−5
R915	A−4
R916	A−4
R917	A−4
R918	A−4
R919	A−4
R920	B−4
R921	B−4
R922	A−4
R923	B−4
R925	A−5
R926	A−5
R927	A−5
R928	A−4
R930	A−2
R932	A−3
R933	A−3
R934	A−3
R935	A−3
R936	A−3
R937	A−3
R938	A−3
R939	B−4

SYMBOL NO.	ADDRESS
SA901	A−1
T901	A−3